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Full Length Research Paper

A literature review of the relationship between governance, funding strategy and sustainability of non-government organizations

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The correlation among governance, funding strategy, and sustainability is vital for non-government organizations (NGOs) and is significant to scholars, policymakers, and NGO practitioners. This paper presents an extensive review of existing literature and a thorough analysis of the key factors affecting NGOs' sustainability. The paper defines fundamental concepts, exploring the probable relationship between governance, funding strategy, and NGO sustainability, as well as examining the factors that influence the effectiveness of NGOs. The paper considers the responsibilities of boards of directors, leadership, accountability, and openness in fostering effective NGO governance. Under funding approaches, it investigates various funding sources for NGOs, such as grants, contributions, and social entrepreneurship, along with their associated challenges. Regarding sustainability, the paper scrutinizes financial, programmatic, and organizational sustainability, plus factors that facilitate or impede NGO sustainability. In conclusion, the paper emphasizes the primary discoveries from the literature review and their practical and policy implications. It contends that effective governance, suitable funding methods, and sustainability are vital for NGO success and suggests that NGOs adopt optimal governance practices, diversify funding streams, and emphasize sustainability in their organizational plans. Policymakers can assist NGOs by cultivating an environment that fosters effective governance, grants access to a variety of funding options, and promotes sustainability within the sector. The paper incorporates a wide array of sources and presents an up-to-date examination of the literature concerning the interrelation of governance, funding approaches, and NGO sustainability.

Key words: Non-Governmental organizations, sustainability, governance, funding strategy, social responsibility, funding sources, policy implications, institutional environment.

INTRODUCTION

Non-government organizations (NGOs) play a vital role in addressing global social, economic, and environmental issues affecting communities. They must be sustainable, responsible, and efficient in providing programs and services to the populations they support. Various factors, such as governanc structures, funding approaches, and

organizational capabilities, influence the sustainability of NGOs. Strong governance fosters accountability, openness, and a focus on community needs, while weak governance can endanger NGO sustainability. NGOs depend on numerous funding sources, and their funding tactics affect their financial stability and program delivery effectiveness. Organizational capacity, encompassing robust systems and processes, program monitoring, risk management, and stakeholder partnerships, is also essential for sustainability.

This manuscript presents an extensive literature review on the interrelation between governance, funding tactics, and NGO sustainability. It delves into various aspects of governance, funding methods, and organizational capacity that contribute to NGO sustainability. The review also investigates the challenges NGOs face, including the influence of external elements such as political turbulence, economic downturns, and natural disasters. The article relies on a diverse array of sources to provide a thorough and current assessment of the subject matter.

The paper contributes to the literature on NGO sustainability by highlighting the factors impacting the sustainability of NGOs and emphasizing the importance of effective resource management, capacity building, and adaptability. The paper also brings out important knowledge for policymakers, NGO leaders, and other stakeholders interested in improving the sustainability of NGOs.

LITERATURE REVIEW

Non-government organizations (NGOs) are essential in tackling social, economic, and environmental issues experienced by communities globally. Various aspects influence NGO sustainability, such as governance arrangements, funding approaches, and organizational capabilities. This scholarly review investigates the interplay among governance, funding tactics, and sustainability within the context of NGOs.

Governance and Sustainability of NGOs

An NGO's governance framework impacts its capacity to allocate resources, secure funding, and uphold accountability.

Simionescu and Diaconu (2019) point out that the governance framework influences the sustainability of NGOs by affecting financial stability, transparency, and efficacy. Uddin and Ferdousi (2021) contend that sound governance practices boost NGO credibility, rendering them more appealing to donors, partners, and stakeholders.

Moreover, an NGO's governance framework affects its decision-making processes, which can either promote or hinder sustainability. Malekpur and Sharifirad's (2019)

study on Iranian NGOs discovered a positive correlation between an NGO's governance framework's effectiveness and sustainability. Similarly, Oh and Lee (2019) determined that South Korean NGOs with robust governance frameworks were more adept at adapting to changing situations and preserving their sustainability.

Beyond internal governance frameworks, external governance mechanisms also contribute to NGO sustainability. Sukmana and Firdausy (2019) maintain that NGOs rely on external stakeholders, such as government agencies, donors, and the public, for funding and backing. Preserving positive relationships with these stakeholders is crucial for an NGO's sustainability. Abubakar et al. (2021) also observed that the regulatory context in which NGOs function can impact their sustainability, with NGOs in a more supportive environment being more likely to sustain themselves.

In summary, the literature implies that governance is a crucial element in NGO sustainability, encompassing both internal structures and external relationships. NGOs with solid governance frameworks are more adept at resource management, accountability maintenance, and adaptation to changing situations, all of which contribute to their sustainability. However, external governance mechanisms, including the regulatory environment and stakeholder relationships, influence NGO sustainability significantly.

Funding strategy and sustainability of NGOs

Financing is crucial for NGOs, and their sustainability relies on their capability to effectively mobilize and manage resources. The resource dependence theory posits that NGO sustainability hinges on their capacity to acquire funding from various sources and efficiently manage their finances. Oh and Lee (2019) assert that an NGO's funding approach influences its sustainability by affecting financial stability, adaptability, and autonomy. Sukmana and Firdausy (2019) also emphasize the significance of funding diversification, advocating that NGOs broaden their funding sources to diminish reliance on a single donor.

Additionally, the effectiveness of funding approaches relies on the external environment, such as the political and economic context of the country where the NGO operates. Abubakar et al. (2021) discovered that political and economic instability in Nigeria impacts NGOs' ability to obtain funding and maintain their initiatives. In such situations, NGOs may need to employ flexible funding tactics that permit adaptation to evolving circumstances and the acquisition of resources from multiple sources.

The institutional theory also sheds light on the connection between funding approaches and NGO sustainability. Malekpur and Sharifirad (2019) suggest that NGOs must adhere to institutional norms and expectations concerning funding practices to be

perceived as legitimate and gain stakeholder trust. For example, in Iran, NGOs receiving funding from international donors may encounter difficulties in establishing trust with local communities and government officials who view them as advocating foreign agendas. In these cases, NGOs may need to adopt funding strategies that align with local standards and expectations to attain approval and maintain their programs.

Kimeu and Karugu (2020) similarly discovered that Kenyan NGOs depend on collaborations with local governments and private sector entities to uphold their initiatives. These partnerships not only supply financial assistance but also bolster the legitimacy and credibility of NGOs, rendering them more effective in addressing community requirements.

The authors contend that NGOs must cultivate robust partnerships with diverse stakeholders to guarantee sustainable funding and programmatic outcomes.

In summary, the literature indicates that funding strategy is a vital factor in NGO sustainability, and effective methods depend on both the governance framework and the external environment in which the NGOs function. NGOs should employ adaptable and diversified funding strategies that conform to local norms and expectations, forge solid partnerships with stakeholders, and effectively manage their finances to ensure long-term sustainability.

Institutional theory and sustainability of NGOs

The institutional theory posits that NGOs function within a broader institutional context that influences their behaviours and outcomes. The institutional setting impacts NGO sustainability by affecting its legitimacy, reputation, and social capital. Malekpur and Sharifirad (2019) maintain that institutional pressures impact the sustainability of Iranian NGOs as they confront challenges associated with government regulations, societal standards, and cultural values. Kimeu and Karugu (2020) also emphasize the significance of institutional backing, arguing that Kenyan NGOs need to collaborate closely with government agencies and other stakeholders to boost their sustainability.

Additionally, Awino and Nabukalu (2020) investigate the role of institutional pressures in shaping the sustainability practices of Ugandan NGOs. They contend that NGOs must traverse intricate institutional environments comprising diverse stakeholders with varying expectations and interests. NGOs that can align their practices with institutional norms and values are more likely to attain legitimacy and improve their sustainability. Institutional theory also underscores the importance of isomorphism, referring to organizations' tendency to adopt practices and structures resembling those of other entities in their institutional environment (DiMaggio and Powell, 1983).

Mwase and Kiiru (2016) offer a critical evaluation of institutional theory concerning NGOs in Tanzania. They argue that while institutional theory has helped clarify some aspects of NGO behaviour, it neglects the agency of NGOs in shaping their institutional setting. The authors propose that future research should examine the dynamic interactions between NGOs and their institutional context to gain a more refined comprehension of NGO sustainability.

Institutional theory also emphasizes the role of institutional logic in shaping organizational behaviour and outcomes. Ayinkamiye and Spencer (2021) delve into the role of institutional logic in forming the sustainability practices of South African NGOs. They claim that NGOs in South Africa are subjected to conflicting institutional logic, including professionalism, activism, and community development. NGOs capable of reconciling these conflicting logics are more likely to enhance their sustainability by obtaining legitimacy and support from various stakeholders.

In conclusion, institutional theory offers a valuable perspective for understanding the intricate institutional environments where NGOs operate and the obstacles they encounter in bolstering their sustainability. To enhance their legitimacy and effectiveness, NGOs need to navigate diverse stakeholder expectations, institutional pressures, and conflicting institutional logic.

Comparative analysis of the relationship between governance, funding strategy, and sustainability of NGOs in different countries

This section offers a comparative examination of the relationship between governance, funding strategy, and sustainability of NGOs across various nations. Abubakar et al. (2021) scrutinized the sustainability of NGOs in Nigeria, arguing that robust governance practices, transparent fiscal management, and diversified funding sources contribute to NGO sustainability. Adomako and Danso (2016) also investigated the correlation between governance and sustainability of NGOs in Ghana, discovering that effective governance practices are crucial for NGOs' long-term sustainability. Awino and Nabukalu (2020) assessed the role of institutional factors in the sustainability of NGOs in Uganda, emphasizing the significance of institutional backing and partnership development for NGO sustainability.

In the same vein, Mwase and Kiiru (2016) offer a critical evaluation of NGO sustainability in Tanzania, contending that institutional factors, such as government policies and regulations, impact NGO sustainability in the nation. They also stressed the importance of NGOs engaging with the wider institutional setting to improve their sustainability. Ayinkamiye and Spencer (2021) explore the sustainability of NGOs in South Africa, underscoring the importance of resource mobilization,

transparency, and accountability for NGO sustainability in the country. They argue that NGOs must create diverse funding strategies and implement effective governance structures to bolster their sustainability.

In summary, the comparative analysis of the relationship between governance, funding strategy, and sustainability of NGOs in different nations indicates shared themes and challenges influencing NGO sustainability across various contexts. Strong governance practices, transparent financial management, and diversified funding sources are essential for NGO sustainability, irrespective of the country or context. Additionally, institutional factors, such as government policies and regulations, societal norms, and cultural values, impact NGO sustainability and necessitate NGOs to engage with the broader institutional environment to enhance their sustainability.

Critical review of literature on governance, funding strategy, and sustainability of NGOs

This section offers a critical examination of the literature on governance, funding strategies, and NGO sustainability. Mwase and Kiiru (2016) contend that institutional theory presents a valuable framework for understanding NGO sustainability in Tanzania, emphasizing the impact of institutional norms, regulations, and values on shaping NGO behaviour and outcomes. Ayinkamiye and Spencer (2021) critically review resource dependence theory literature, arguing that it provides a helpful framework for comprehending the funding strategy and sustainability of NGOs in South Africa.

They also propose that future research should investigate the influence of contextual elements, such as political and economic conditions, on the funding strategy and sustainability of NGOs.

In general, the literature on governance, funding strategy, and NGO sustainability underscores the significance of effective governance practices, diversified funding sources, and institutional backing for NGOs' long-term sustainability.

Resource dependence theory and institutional theory offer valuable frameworks for understanding the relationships between governance, funding strategy, and NGO sustainability, although contextual factors play a crucial role in shaping NGO behaviour and outcomes.

The comparative analysis of different countries reveals the similarities and differences in the relationship between governance, funding strategy, and NGO sustainability across varying institutional contexts, providing insights into the factors affecting NGO sustainability.

Despite the abundance of research on the relationship between governance, funding strategy, and NGO sustainability, several gaps and challenges persist. For instance, more research is needed on the impact of funding diversity on NGO sustainability, as well as the role of political and economic factors in influencing NGO behaviour and outcomes.

Moreover, additional research is required to explore the role of partnerships and collaborations in improving NGO sustainability. Addressing these gaps and challenges can offer insights into how NGOs can enhance their sustainability in an ever-evolving and complex institutional landscape.

In conclusion, the literature review emphasizes the importance of governance and funding strategy in NGO sustainability. Robust governance practices, transparent financial management, and varied funding sources are crucial for the long-term sustainability of NGOs. Institutional factors, such as government policies, social norms, and cultural values, also play a significant role in shaping the sustainability of NGOs, highlighting the need for NGOs to navigate and adapt to these influences in order to thrive.

RESEARCH DESIGN AND METHODOLOGY

This section outlines the research design and methodology employed in this paper to investigate the relationship between governance, funding strategy, and sustainability of non-government organizations (NGOs). A systematic literature review approach was adopted to synthesize and critically analyze existing research on the topic, which allowed for a comprehensive understanding of the factors that influence the sustainability of NGOs.

Systematic literature review

A systematic literature review was conducted to identify, assess and summarize the available research on the relationship between governance, funding strategy and NGO sustainability. The review aimed to provide a comprehensive understanding of the factors affecting the sustainability of NGOs, as well as to identify gaps and challenges in the existing literature.

Search strategy and selection criteria

The search strategy involved a systematic search of academic databases, mainly from Google Scholar, to identify relevant articles published in peer-reviewed journals.

The search was performed using a combination of keywords, including 'non-governmental organizations', 'NGOs', 'governance', 'funding strategy', 'sustainability', 'institutional theory' and 'resource dependency theory'. The search was limited to articles published in English from 2010 to ensure the review captures the latest developments and trends in the field. The selection criteria for the inclusion of articles in the overview were:

1. Focus on the relationship between governance, funding strategy and sustainability of NGOs.
2. Published in a peer-reviewed journal, and
3. Provision of empirical or theoretical information on the factors affecting the sustainability of NGOs.

After the search and selection process, the articles were then subjected to thematic analysis to identify key themes and patterns in the literature.

Analysis and synthesis

The selected articles were subjected to thematic analysis to identify key themes and patterns in the literature. During the analysis, the articles were screened systematically and relevant information was coded and grouped by topic. These topics included NGO governance and sustainability, NGO funding strategy and sustainability, institutional theory and NGO sustainability, and comparative analyses of the relationship between NGO governance, funding strategy and sustainability in different countries.

The themes were then critically analyzed and synthesized to provide a comprehensive understanding of the factors affecting NGO sustainability, as well as to identify gaps and challenges in the existing literature.

Rigor and trustworthiness

To ensure rigour and trustworthiness in the systematic literature review, the following strategies were employed:

1. A transparent and systematic search strategy was used to identify relevant articles.
2. The selection criteria for the inclusion of articles in the review were clearly defined.
3. The data analysis process was systematic and followed established guidelines for thematic analysis (Braun and Clarke, 2006).
4. The findings were supported by evidence from the selected articles, and appropriate in-text references were provided in the APA format.

These strategies helped ensure that the review provided a comprehensive, reliable, and valid synthesis of the existing literature on the relationship between governance, funding strategy, and sustainability of NGOs.

FINDINGS AND DISCUSSION

The literature review emphasizes the key aspects contributing to the longevity of non-government organizations (NGOs). Governance structure, funding approach, and institutional context all play a vital role in determining NGO sustainability.

Governance structure

The literature review findings underscore the importance of governance structure as a crucial determinant of the sustainability of NGOs, aligning with previous studies (Simionescu and Diaconu, 2019; Uddin and Ferdousi, 2021; Oh and Lee, 2019; Malekpur and Sharifirad, 2019). Indeed, NGOs with robust governance structures are better positioned to manage their resources effectively, maintain accountability to their stakeholders, and adapt to evolving circumstances. Furthermore, these studies highlight the need for NGOs to develop and implement comprehensive governance frameworks that incorporate essential components such as clearly defined roles and responsibilities, a well-articulated decision-making process, effective communication channels, and

mechanisms to monitor and evaluate the organization's performance.

External governance mechanisms, including regulatory environments and stakeholder relationships, also play a significant role in determining the sustainability of NGOs (Sukmana and Firdausy, 2019; Abubakar et al., 2021). NGOs need to navigate complex regulatory landscapes to ensure compliance with relevant laws and regulations, which often differ across jurisdictions. This compliance is critical in maintaining the organization's reputation and legitimacy in the eyes of its stakeholders. Furthermore, NGOs must pay special attention to cultivating and managing stakeholder relationships, as their support and funding are vital for the organization's ongoing operations and long-term viability. This may involve engaging in regular communication, collaborative projects, and transparent reporting to foster trust and credibility.

In light of the findings, it is essential for NGOs to prioritize the development and continuous improvement of their governance structures to enhance their sustainability. This may involve investing in capacity building and training programs for board members and senior management, implementing best practices in governance, and periodically reviewing the effectiveness of the governance structure. Additionally, NGOs should take proactive steps to engage with their external stakeholders and regulatory bodies, ensuring that they remain informed and responsive to the evolving expectations of their operating environment. By doing so, NGOs can create a more resilient and adaptable foundation to support their mission and, ultimately, improve their long-term sustainability.

Funding strategy

Funding is a critical resource for NGOs, and effective funding strategies are essential for sustainability. As suggested by resource dependence theory, NGOs must secure funding from diverse sources and manage their finances effectively to ensure their sustainability (Oh and Lee, 2019; Sukmana and Firdausy, 2019). Diversifying funding sources helps to mitigate the risks associated with overreliance on a single donor or type of funding, such as government grants, private donations, or corporate sponsorships. By cultivating a diverse funding portfolio, NGOs can better weather financial uncertainties and fluctuations, thereby increasing their resilience and long-term sustainability.

Moreover, NGOs must align their practices with institutional norms and values to gain legitimacy and enhance their sustainability (Malekpur and Sharifirad, 2019). This involves adhering to accepted standards and best practices in their field, as well as demonstrating transparency, accountability, and ethical conduct in their operations. By doing so, NGOs can build trust and credibility among their stakeholders, including donors,

beneficiaries, and partner organizations. This trust and credibility, in turn, can lead to increased funding opportunities and support, thereby contributing to the organization's sustainability. In politically and economically unstable contexts, NGOs may need to adopt flexible funding strategies to adapt to changing circumstances and secure resources from multiple sources (Abubakar et al., 2021). This flexibility can help NGOs remain agile and responsive to emerging needs, challenges, and opportunities in their operating environment.

The literature emphasized the importance of building strong partnerships with stakeholders to ensure sustainable funding and programmatic outcomes (Kimeu and Karugu, 2020), which entails fostering collaborative relationships with donors, partner organizations, and beneficiaries through open communication, shared decision-making, and mutual accountability. By working closely with stakeholders, NGOs can co-create tailored solutions that address the specific needs of their target communities while maximizing resource utilization and impact. Additionally, strong partnerships can help NGOs leverage additional funding, technical assistance, and other resources that can further enhance their sustainability. In conclusion, effective funding strategies, alignment with institutional norms and values, and strong partnerships with stakeholders are key factors that contribute to the sustainability of NGOs.

Institutional environment

The institutional theory provides a comprehensive framework for understanding the intricate relationships between NGOs and the institutional environment in which they operate. As Malekpur and Sharifirad (2019) and Awino and Nabukalu (2020) point out, the institutional environment is a critical determinant of NGOs' behaviour, performance, and long-term sustainability. This environment consists of a myriad of formal and informal rules, norms, and values that govern the actions and interactions of various organizations, including NGOs, governments, donors, and other stakeholders. Consequently, the institutional environment shapes the legitimacy, reputation, and social capital of NGOs, which are essential for their success and sustainability.

One key aspect of the institutional environment is the notion of legitimacy, which refers to the extent to which NGOs' actions, practices, and objectives are deemed appropriate and acceptable by the wider society and its constituent stakeholders. NGOs must continually strive to maintain and enhance their legitimacy by aligning their mission, values, and practices with those of the institutional environment. By doing so, they can foster positive relationships with stakeholders, such as government agencies, donors, and local communities, which in turn can lead to increased support, resources,

and opportunities for collaboration. Furthermore, NGOs that demonstrate a strong commitment to transparency, accountability, and good governance are more likely to be viewed as legitimate and trustworthy, thereby enhancing their reputation and prospects for long-term sustainability.

Another important dimension of the institutional environment is the concept of social capital, which encompasses the networks, relationships, and trust that exists among different stakeholders within a given context. In the case of NGOs, social capital can be a valuable resource for overcoming challenges, leveraging opportunities, and fostering collaboration with a diverse range of stakeholders. To build and maintain social capital, NGOs must actively engage with their stakeholders, including government agencies, donors, and local communities, and demonstrate a genuine commitment to addressing their needs and concerns. By doing so, NGOs can enhance their capacity to navigate the complex institutional environment, adapt to changing conditions, and ultimately contribute to their long-term sustainability.

IMPLICATIONS

Non-profit organizations (NGOs) play a vital role in advancing social, environmental, and economic growth. However, their longevity is not assured, and they face many obstacles that jeopardize their survival. As a result, NGOs must concentrate on aspects that can improve their sustainability and guarantee their long-term influence.

A crucial factor affecting NGO sustainability is their governance structure. Strong governance promotes effective decision-making, ensures responsibility, and allows NGOs to adjust to evolving situations. Therefore, NGOs should prioritize creating and sustaining a solid governance structure that adheres to best practices and institutional standards.

Financing is another essential resource for NGOs, and successful funding strategies are vital for their sustainability. NGOs should diversify their funding sources and effectively manage their finances to ensure their sustainability. Furthermore, forging solid relationships with stakeholders and showcasing programmatic results can boost NGO credibility, attracting stable funding and support.

The institutional context also impacts NGO sustainability. NGOs must manoeuvre through intricate institutional settings and align their practices with institutional norms and values to gain legitimacy and improve their sustainability.

Consequently, NGOs should collaborate closely with government agencies, donors, and other stakeholders to enhance their sustainability and fulfil their objectives.

Monitoring and evaluation are crucial for improving

NGO sustainability. NGOs should establish comprehensive monitoring and evaluation systems that track their financial, social, and environmental performance, using the results to guide decision-making and enhance their sustainability. By focusing on these factors, NGOs can improve their sustainability and achieve their goal of fostering social, environmental, and economic growth.

The findings from the literature review and subsequent discussion have several implications for NGOs, policymakers, and other stakeholders. The following sections present the practical implications of these findings and offer specific recommendations for enhancing the sustainability of NGOs by improving their governance structures, funding strategies, and institutional alignment.

Implications for NGO managers

In light of the findings, it is evident that NGO managers play a pivotal role in ensuring the long-term sustainability and effectiveness of their organizations. One critical aspect that they must focus on is establishing robust governance structures that foster financial stability, transparency, and effectiveness. To achieve this objective, NGO managers should implement the following strategies:

First, it is essential to develop well-defined organizational policies and procedures that guide decision-making processes and ensure accountability. These policies should cover critical areas such as financial management, human resource management, and program planning and evaluation. By creating a transparent and accountable decision-making framework, NGOs can not only enhance their legitimacy but also ensure that resources are allocated efficiently and effectively.

Second, NGO managers should strive to assemble a diverse and competent board of directors comprising members with relevant expertise and experience in various fields. A diverse and skilled board can provide valuable guidance, oversight, and strategic direction, thereby enhancing the organization's overall governance and effectiveness.

Additionally, such a board can foster an inclusive and open organizational culture, which can further contribute to the NGO's long-term success and sustainability.

Third, it is crucial for NGO managers to implement regular evaluations and audits of governance practices to identify areas for improvement and ensure compliance with relevant laws and regulations. These assessments can be conducted internally or through independent third parties and should cover a wide range of aspects, including financial management, program delivery, and stakeholder engagement. By consistently monitoring and improving governance practices, NGOs can mitigate

potential risks and optimize their performance.

Moreover, NGO managers should prioritize the development of diversified and flexible funding strategies that align with local norms and expectations. To achieve this, they should consider the following recommendations:

1. Pursue funding from a variety of sources, including government agencies, private donors, and corporate partners, to reduce dependence on any single donor and enhance financial stability.
2. Establish and maintain partnerships with local stakeholders, such as community organizations, businesses, and government entities, to bolster their legitimacy and credibility. In turn, this can lead to increased funding opportunities and support for the NGO's initiatives.
3. Regularly monitor and adapt funding strategies in response to changes in the external environment, such as political or economic instability. By being proactive and adaptive, NGOs can mitigate the impact of these changes on their financial sustainability and continue to pursue their missions effectively.

All in all, NGO managers have a significant responsibility in shaping the long-term success and sustainability of their organizations. By prioritizing good governance and developing diversified funding strategies, they can effectively navigate the complex institutional environment and ensure the continued effectiveness of their NGOs.

Implications for policymakers

Policymakers play a vital role in shaping the context within which NGOs operate, and their decisions can significantly impact the sustainability and effectiveness of these organizations. To support the long-term success of NGOs, policymakers should focus on creating an enabling regulatory environment that both facilitates the work of NGOs and ensures transparency and accountability. To achieve this, the following recommendations should be considered:

First, policymakers should develop clear, consistent, and comprehensive regulations governing the operations of NGOs. These regulations should encompass various aspects of NGO management, such as registration, reporting, and financial management requirements. By establishing a well-defined regulatory framework, policymakers can provide NGOs with the necessary guidance and structure while also ensuring that they operate in a transparent and accountable manner. Furthermore, such a framework can help reduce administrative burdens and ambiguities, allowing NGOs to focus more effectively on their core missions.

Second, policymakers should actively encourage collaboration between NGOs and government agencies by providing incentives and support for partnership

initiatives. Collaborative efforts will not only enhance the capacity of NGOs and governments to address pressing societal challenges but also foster mutual learning and innovation. To promote such collaboration, policymakers can introduce measures such as funding schemes, policy forums, and knowledge-sharing platforms that facilitate dialogue and cooperation between NGOs and government entities. By fostering a collaborative environment, policymakers can help optimize the use of resources and expertise, ultimately leading to improved outcomes for the communities served by NGOs.

Third, policymakers should offer capacity-building programs and resources aimed at helping NGOs develop robust governance structures and funding strategies. Such capacity-building initiatives can take various forms, including training workshops, mentorship programs, and technical assistance in areas such as financial management, strategic planning, and stakeholder engagement. By providing NGOs with the necessary tools and knowledge to enhance their governance and financial sustainability, policymakers can contribute to the long-term success of these organizations and the broader civil society sector.

All in all, policymakers have a critical role to play in supporting the sustainability of NGOs by creating an enabling regulatory environment and promoting collaboration and capacity building. By implementing the recommendations outlined above, policymakers can contribute to a vibrant and effective civil society sector that is better equipped to address complex social, economic, and environmental challenges.

Implications for other stakeholders

Donors, private sector entities, and other stakeholders play a crucial role in enhancing the sustainability of NGOs by supporting their efforts to improve governance structures, funding strategies, and institutional alignment. To effectively contribute to the long-term success and sustainability of NGOs, these stakeholders should consider the following recommendations:

First, stakeholders should provide financial and technical support to NGOs for capacity-building initiatives related to governance, financial management, and fundraising. Such support can help NGOs enhance their organizational capacities, optimize resource allocation, and develop sustainable funding strategies. Capacity-building initiatives can include training programs, consultancy services, and access to specialized resources and tools that empower NGOs to manage their resources effectively and maintain transparency and accountability. By investing in the capacity of NGOs, stakeholders can contribute to the development of a more resilient and effective civil society sector.

Second, stakeholders should actively collaborate with

NGOs to address community needs and contribute to the development of sustainable programs and initiatives. Private sector entities, in particular, can leverage their expertise, resources, and networks to enhance the impact of NGO programs and projects. Collaborative efforts may include joint initiatives, knowledge sharing, and the provision of in-kind support such as technical assistance or access to resources. Such partnerships will not only strengthen the capacity of NGOs but also generate shared value for all stakeholders involved, ultimately leading to more sustainable and impactful outcomes.

Third, stakeholders should advocate for a supportive regulatory environment and promote collaboration between NGOs, government agencies, and other stakeholders. This can involve engaging in policy advocacy and dialogue, participating in multi-stakeholder forums, and contributing to the development of best practices and standards that promote transparency, accountability, and collaboration within the civil society sector. By championing a supportive regulatory environment and fostering partnerships, stakeholders can contribute to a more conducive ecosystem for NGOs to thrive and effectively address the complex challenges they face.

All in all, donors, private sector entities, and other stakeholders can play a vital role in enhancing the sustainability of NGOs by providing support, fostering collaboration, and advocating for a favourable regulatory environment. By embracing these recommendations, stakeholders can contribute to the development of a vibrant and effective civil society sector capable of addressing pressing social, economic, and environmental issues.

Conclusion

The literature emphasizes the importance of governance, funding strategy, and institutional factors in securing NGO sustainability. NGOs must prioritize developing and maintaining a solid governance structure that enables effective decision-making, guarantees accountability, and allows them to adapt to changing circumstances. Successful funding strategies are also critical, with NGOs needing to diversify their funding sources, effectively manage their finances, and forge strong partnerships with stakeholders to ensure continuous funding and support.

However, as the world continually changes, NGOs encounter new challenges that threaten their sustainability. For example, the unprecedented COVID-19 pandemic and the Ukraine conflict have disrupted the world in previously unimaginable ways. Thus, future research can investigate how NGOs can implement innovative funding strategies to enhance their sustainability in the face of these emerging challenges.

One potential approach is utilizing technology and

digital platforms to boost fundraising and engage stakeholders. For example, NGOs could use crowdfunding platforms to acquire funding from a diverse array of donors, including individuals and corporations. Additionally, social media can help engage stakeholders and raise awareness about the organization's mission and impact. By adopting innovative funding strategies that leverage technology, NGOs can improve their sustainability and overcome challenges presented by emerging global events.

While governance, funding strategy, and institutional factors are crucial to NGO sustainability, they must continue to adapt and innovate in response to emerging challenges. By adopting flexible and diversified funding strategies, leveraging technology, and collaborating with other sectors, NGOs can enhance their sustainability and achieve their mission of promoting social, environmental, and economic development.

RECOMMENDATIONS AND CHALLENGES

Drawing from the implications discussed in previous sections, we propose the following recommendations to help NGOs enhance their sustainability:

1. Prioritize the establishment of robust governance structures that promote accountability, transparency, and effectiveness. Strong governance structures can enhance the credibility and trustworthiness of NGOs, contributing to their long-term success and sustainability.
2. Develop diversified and flexible funding strategies that align with local norms and expectations. By diversifying their funding sources and adapting to the local context, NGOs can minimize financial risks, ensure stability, and maintain a consistent flow of resources to support their programs and initiatives.
3. Build strong partnerships with stakeholders, including government agencies, donors, private sector entities, and local communities, to enhance legitimacy and secure sustainable funding. These partnerships can foster mutual understanding, promote resource sharing, and facilitate joint problem-solving efforts, ultimately contributing to the overall effectiveness and sustainability of NGOs.
4. Engage proactively with the broader institutional environment to navigate complex institutional pressures and align practices with institutional norms and values. By understanding and responding to the dynamics of the institutional context, NGOs can enhance their legitimacy, reputation, and social capital, which are crucial for their long-term sustainability.

Despite the potential benefits of implementing these recommendations, it is essential to recognize the challenges and limitations NGOs may encounter.

Resource constraints, resistance to change, and varying degrees of support from external stakeholders can impede the successful execution of these strategies. Consequently, it is crucial for NGOs to remain adaptable and responsive to their unique contexts, continuously assess their practices, and seek collaboration with stakeholders to overcome these challenges.

All in all, the recommendations provided can contribute to the sustainability of NGOs by addressing key areas such as governance, funding, partnerships, and institutional alignment. While challenges may arise during the implementation process, NGOs that remain adaptable, responsive, and collaborative can work towards achieving long-term sustainability and effectively address the complex issues they aim to resolve.

Suggestion for future research

Building on the findings of this paper, future research can delve deeper into various dimensions of NGO sustainability by addressing the following areas:

1. Identification of effective practices and strategies: Future research could focus on identifying specific practices and strategies that NGOs can adopt to strengthen their governance structures, funding strategies, and stakeholder engagement. This may involve comparative case studies or in-depth analyses of successful NGOs to understand the factors and practices that contribute to their sustainability. Such research would provide actionable insights and guidelines for NGOs seeking to improve their sustainability and effectiveness.
2. Examination of contextual factors: It is essential to investigate the role of contextual factors, such as cultural, political, and economic conditions, in shaping NGO sustainability. By conducting comparative and cross-cultural studies, researchers can uncover the ways in which contextual factors influence the effectiveness of governance structures, funding strategies, and stakeholder engagement in different settings. This knowledge will contribute to the development of context-specific strategies and help NGOs adapt their approaches to the unique challenges and opportunities they face in their operating environments.
3. Exploration of Inter-organizational collaborations: Future research could also examine the potential benefits and challenges of collaboration between NGOs and other sectors in enhancing their sustainability. For instance, partnering with the private sector could provide NGOs access to resources, expertise, and innovative solutions in areas such as marketing, finance, and technology. Likewise, collaboration between NGOs can facilitate resource sharing, joint programming, and improved coordination, leading to increased impact and sustainability. Studies focusing on these collaborative efforts can identify best practices, potential pitfalls, and practical recommendations for NGOs seeking to engage

in such partnerships.
4. Assessing the role of technology and innovation: The role of technology and innovation in enhancing NGO sustainability deserves further attention. Future research could explore how NGOs can leverage technological advancements and innovative practices to improve their governance, funding strategies, and stakeholder engagement. For example, researchers could investigate the use of digital platforms for donor engagement, crowdfunding, and data-driven decision-making. This line of inquiry would shed light on the ways in which NGOs can capitalize on emerging technologies and innovative approaches to strengthen their sustainability.

By addressing these research areas, future studies can enrich the understanding of the factors that influence NGO sustainability and contribute to the development of more effective and sustainable practices. This, in turn, will enhance the capacity of NGOs to address pressing global challenges and create lasting positive change in the communities they serve.

Study limitation

While this study has provided valuable insights into the relationship between governance, funding strategy, and sustainability of NGOs, it is essential to acknowledge its limitations. The primary limitations of this study are related to the scope of the literature review and the search strategy employed.
1. Language bias: The study focused exclusively on literature published in English, which may have resulted in the omission of relevant research published in other languages. This language bias may limit the generalizability of the findings, as the perspectives and experiences of NGOs operating in non-English speaking contexts could be underrepresented. Future research should consider incorporating literature published in various languages to obtain a more comprehensive and diverse understanding of the factors influencing NGO sustainability.
2. Search engine limitations: The study relied on the Google Scholar search engine to identify relevant articles. While Google Scholar is a widely used and comprehensive resource for academic research, it may not capture all the available literature on the subject. By relying solely on this search engine, the study might have missed relevant articles published in other databases, such as Scopus, Web of Science, or specialized NGO research repositories. Future studies should consider employing a more extensive search strategy, including multiple databases and search engines, to ensure a more comprehensive review of the literature.
3. Temporal scope: The literature review was limited to articles published from 2010 onwards, with the aim of

capturing the latest developments and trends in the field. While this temporal scope has provided insights into recent research, it may have excluded earlier studies that could offer valuable historical perspectives on the evolution of NGO governance, funding strategies, and sustainability. Expanding the temporal scope in future research could help uncover additional insights and contextualize the findings within a broader historical context.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Essay

Presentation du theorem

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INTRODUCTION

From Albert Einstein to theoretical physics professor Stephen Hawking, researchers have long sought to unify the infinitely small (elementary or subatomic particles) with the infinitely large (planets, galaxies, the universe, etc.). Following a need by Professor PH-Perez in the book electromagnetism in a material medium and in a vacuum, even if it means unifying the electric constant and the gravitational constant, I have developed a theorem which unifies the infinitely small with the infinitely large. The physical formula contains four constants (the Planck constant, gravitational, gravitational, and electric) and four fields (the gravitational, gravitational, electromagnetic fields, and the Higgs field which is the unification of other fields). I have been working on this theorem for six years.

DESCRIPTION OF THE THEOREM

Inventory

- P: weight vector;
- e1, e2, e3 vectors;
- P=mg;
- Ho: Higgs boson defined in volts or newtons;
- µ0: vacuum magnetization;
- C: celerity;
- $x^{\wedge}(y)$: x to the power of y;
- £o: epsilon Zero ($£0 = 1/(µ0*C^{\wedge}(2))$);
- h: Planck constant;
- $h = 6.62607015.10^{\wedge}(-34)$ ds;
- Rau = bulk density;
- Nabla.E (scalar nabla the field E= divergence of the vector E);
- div (-grad.V) = -Rau/£o (Rau divide by £o);
- E= -grad (gradient) V;
- V: voltage;
- (-ib): complex value of e2;
- k: electrical constant;
- Q: load;

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-r^(3) = volume of the cube;
-E: electromagnetic field;
-g: gravity constant;
-G: gravitational constant;
-G(M): gravitational field;
-g: gravity field;
-m: mass;
-T: the period;
-a: acceleration;
-f: frequency;
-QUAGMA: quarks, gluons, plasma
-delta * E = hv or E=hf;
-v: Speed;
-c: celerity;

DESCRIPTION OF THE THEOREM

Description of the ore me

In the inertia theorem we have:
mg = ma => g = a
And in gravitational interactions we have:
mg = mG => g = G
so under certain conditions we:
a = g = G
Here "a" is the acceleration of QUAGMA.

The QUAGMA grows by describing successive squares of increasing size (golden figure and Fibonacci constant). However, it contains the three interactions, namely:

-the fundamental interaction;
-weak interaction;
-strong interaction;

When we bring together or unify the strong and weak interaction as well as the electromagnetic field, they combine to give the Higgs field. Therefore it is the acceleration of QUAGMA which describes the beginnings of the universe in this theorem, but in the theorem already established they are there.

In this theorem the universe is described as being a growing cube always boosted by the acceleration of the QUAGMA. For the case where we have "i" instead of "-i" we will have a negative mass therefore by
Consequently, the antimatter of the universe has negative mass (like the core of the sun).

NB: vector E * h bar /2 = E ar ^(3) vector E * h bar/2 is not part of the Theorem.

From the parameter G we have:

G(m) = - GM/r^(2) is equal -GM divided by r squared

The theorem is as follows:

Having unified the infinitely small with the infinitely large, the planets and subatomic particles circulate in cubes (here the distribution is volumetric and not surface like in EINSTEIN's relativity where the stars circulate on a curved surface fabric, but here the stars circulate in cubes as in the figure that describes the universe) that is to say that they are quantified, they are arranged by level. To better support the fact that quantification, the earth for example has more than 7 levels of quantification which are: the troposphere, the ozone layer, the stratosphere, the mesosphere, thermosphere, the ionosphere, Exosphere. To have the gravitational constant in the theorem we draw the distance r in the following parameter:

G(m) = -GM/r ^(2) we now express the distance that
we will have: -GM = G(m) * r ^(2) => r = square root
of (-GM/G(m)).
And here is the gravitational constant which contained in the distance r

The blue colored magnetic spin decays into photon and electron, through the energy containing Planck's constant.

There are movements and flickering of particles in the universe and in the earth's atmosphere which are as follows:

1.   There are particles that move in a straight line without deviation, according to Professor Stephen Hawking's model, these would be photons.
2.   Then there are particles whose trajectory is not straight (they zigzag), according to Professor Stephen Hawking's model these would be electrons which sparkle around a spinor.

NB: According to my work and my research, the energy released from Planck's constant comes from a blue magnetic spin, that is to say that a photon and an electron are released. throughout the universe and in the earth's atmosphere.

$$a = g = 6 \quad \text{avec} \quad G(m) \text{ ou } g = \frac{GMT}{r^3} \implies 6 = \frac{g r^2}{MT}$$

$$\vec{E} \neq \vec{E} \; ; \; E = k \, a \sum_{i=1} Q_i / r^2 \quad \leftarrow \text{divisé par}$$

$$\text{et } \vec{E} = \frac{\rho}{\varepsilon_o}$$

$$\frac{h\vec{E}}{2} \, a. r E + \frac{h\vec{E}}{2} \, a r T = \frac{h\vec{E}}{2} \, a r T \; ; \; T = \text{Période}$$

$$\frac{h\vec{E}}{2} \, _o E + \frac{h\vec{E}}{2} \, a T = \frac{h\vec{E}}{2} \, a T \; ; \; h\vec{E}: \text{infiniment petit}$$

$$\text{où il y'a } g \text{ or } g = a = 6 \; ; \; \frac{h\vec{E}}{2}.E + \frac{h\vec{E}}{2}.T = \frac{h\vec{E}}{2} T$$

The more condensed the size of the matter (particles, atoms, molecules, etc.), the longer the life of the Higgs boson.
For example in the atmosphere of the planet Earth the matter is neither large nor condensed, on the other hand in the universe the matter is large and condensed therefore the Higgs Boson will have a long lifespan thus giving rise to matter condensed and large which is nothing other than dark energy.
   The universe East made up of a mixture of matter and antimatter coexisting together.
In the formula found in the image below replace r by its veritable value which has been changed to G(m) = -GM/r ^(2) and we express r.

$$\frac{h.\vec{E}}{2}. a.r.E = \frac{h.\vec{E}}{2}. a.r.T - h.\vec{E} \, a.rT$$

$$\implies \frac{h.\vec{E}}{2}. a.r.E = \vec{o} \;, \text{ il y'a un equilibre}$$

$$\implies \frac{h.\vec{E}}{2}. a.r.E = 0 = cst = \text{constante}$$

$$r = \frac{GMT}{g(m)} \; ; \; E = k \, a \sum_{i=1}^{+\infty} \frac{Q_i}{r^2} \quad E \longrightarrow +\infty$$

On a donc un champ E infini car $E \longrightarrow +\infty$

$$\implies \frac{h.\vec{E}}{2}. a.r.E = 0 = \text{constant}$$

$$\implies h.\vec{E} \text{ qui sera très petit car :}$$

$$\frac{h.\vec{E}}{2} = \frac{h}{2\pi^2} = \frac{mg.\varepsilon_o}{2 i \rho} \; ; \; \varepsilon_o \longrightarrow o \text{ et } \vec{P} = mg$$

$$\implies \frac{h.\vec{E}. a . GMT. h \, a \sum_{i=1}^{+\infty} Q_i}{2 g(m) r^2} = o$$

$$\frac{h.E. a. GMT. h \, a \sum_{i=1}^{+\infty} Q_i}{2 g(m) r^2} = o \text{ avec } h.\vec{e} = \frac{mg\varepsilon_o}{2 i \rho}$$

$$\frac{mg.\varepsilon_o. a. GMT. h \, a \sum_{i=1}^{+\infty} Q_i}{2 i \rho g(m) r^2} = 0 = cst = \text{constant}$$

Cette egalité est très infiniment grand car $E \longrightarrow +\infty$

Electrostatic field is the interaction of all particles that exist on one particle and vice versa, that is, the interaction of a single particle on all other particles. The electrostatic field induces total conduction if the object that must levitate has a significant gravitational field and a significant probability of presence. In the electrostatic field formula, the induced field becomes a probability of presence. That is to say that here it is the probability of presence that counts and not the position of the particle itself. So, in the general formula, the electric field E becomes a probability in mathematics.

Determine the value of the electrostatic field by calculating the probability of the presence of particles (electrons). Use the mathematical formula for calculating probability to calculate the probability of the presence of particles (electrons).
Very important NB: The passage of a very massive body produces electricity (electrostatic field) by creating a disintegration of the matter. The disintegrated matter gives electrons therefore consequently the presence of an electrostatic field. The electrostatic field works through a probability of presence, that is to say that the presence of a particle (electrons) can vary from 0 to 100% or from 0 to 1. It can be present in several places at the same time like a wave. but everything depends on the value of its probability of presence. Which induces or creates the tunnel effect. The tunnel effect is the fact that a particle has not reached the potential barrier necessary to cross this barrier but crosses it anyway. Since the weight is governed by electricity, the direction of the weight can be changed from vertical to horizontal. you will see below the theoretical calculations of the creation of energy that the formula allows to determine.
NB: the probability of the presence of particles from the field E must be calculated separately just to have an overview of the density that the particles contain. After having calculated it, you will have the probability of the presence of the particles, that is to say the density of probability. It should not be mixed with the theorem below.

The units assigned to the theoretical calculation are inaccurate. The correct units are at the bottom in the second to last image at the bottom.

$$\frac{\hbar \vec{E}}{2} a.r.T = \frac{\hbar \vec{E}}{2} a.r.T + \frac{\hbar \vec{E}}{2} a.r.E$$

$$\frac{\hbar \vec{E}}{2}.a.r.E = \vec{0} \implies \frac{\hbar \vec{E}}{2}.a.r.E = cste$$

$$\frac{\hbar \vec{E}}{2}.a.r.E = 9,4681489581.10^{-16}$$

$$\implies \frac{\hbar \vec{E}}{2}.V^2.E = 9,4681489581.10^{-16}$$

$$\implies E = \frac{9,4681489581.10^{-16} \times 2}{\hbar E V^2}$$

$$E = \frac{9,4681489581.10^{-16} \times 2}{(300.006.000)^2 \times 1,0545718181010^{-34}}$$

E = 199,5074121 V/m d'où E = 200 V/m

Dans l'univers le champ electrique est ou champ electrostatique est de 200 v/m

Déterminons maintenant la taille de l'univers
on aura :

$$\frac{\hbar \vec{E}}{2}.V^2.E = 1,0545718181010^{-34} \times \frac{199,5074121}{200} \times (300.006.000)^2$$

$$\frac{\hbar \vec{E}}{2}.V^2.E = 1,893629792.10^{-15}$$

$$\hbar \vec{E}.V^2.T = (1,893629792.10^{-15} + 1,4770341237.10^{-33}) \times$$

$$\frac{\hbar \vec{E}}{2}.V^2.T = 3,787259583.10^{-15}$$

on a : $V^2 = \dfrac{3,787259583.10^{-15}}{\hbar E \times T}$

$$V^2 = \frac{3,787259583.10^{-15}}{1,56.10^{-22} \times 1,0545718181010^{-34}}$$

$$V^2 = 2,302100682.10^{41} \quad avec \; V^2 = a.r = S \; r = \frac{V^2}{a}$$

L'accélération du quagma ou du plasma est de $10^{14} x$ avec x l'inconnue. Quand on la dérive on a :

$$V = 10^{16} \, m/s$$

Calculons
$$r = \frac{V^2}{a} \implies r = \frac{2,302100682.10^{41}}{10^{14}}$$

$$r = 2,302100682.10^{27} \, m \; ou \; r = 2,302100682.10^{24} \, km$$

In other models (theorem that can calculate the coordinates of the universe) , the size of the universe is 8.7987 10^23 (8.7987 ten to the power of 23). For me the size of the universe is r se found above in the image just above. The universe is a cube in my model and grows following the path of the golden number which is 1.618. To levitate you have to deviate the direction of the weight from vertical to horizontal. This is possible because weight itself is a force, but in electricity we can change the direction of waves, particles, and forces.

$$\frac{\hbar \vec{E}^2}{2} = \frac{m g \mathcal{E}_o}{2 i \rho}$$

$$\begin{cases} m : kg \; ; \; \mathcal{E}_o : F/m \\ g = N/kg \\ \rho = kg/m^3 \text{ ou } ev/m^3 \text{ car le Boson de Higg est sans masse. sa masse est représentée en Giga électron Volt } /ev \end{cases}$$

Calcul de dimension : Soit x la dimension on a :

$$X = \frac{kg \cdot N \cdot kg^{-1} \cdot F \cdot m^{-1} \, m^3}{ev} \implies X = F \cdot N \cdot m^2 \cdot ev^{-1}$$

$$\begin{cases} a : m \cdot s^{-2} \\ E : v/m \\ r : m \end{cases} \text{ et } \begin{cases} a : m \cdot s^{-?} \\ r : m \\ T : s \end{cases}$$

$$\downarrow \qquad\qquad \downarrow$$
$$m \cdot v \cdot s^{-2} \qquad m^2 \cdot s^{-1}$$

$$\frac{\hbar \vec{E}^2}{2} \cdot a \cdot r \cdot T \; : \; F \cdot N \cdot m^4 \cdot s^{-1} \cdot ev^{-1}$$

$$\frac{\hbar \vec{E}^2}{2} \cdot a \cdot r \cdot E \; : \; F \cdot N \cdot m^3 \cdot v \cdot s^{-?} \cdot ev^{-1}$$

The theorem describes the beginnings of the universe and its expansion to the present day, just as Gaussian expansionist theory describes the beginnings of the universe.

The blue colored magnetic spin releases a photon and an electron from which the photon travels through a wormhole and the electron remains where it was produced or vice versa. The photon carries information and we manipulate (because it is entangled) this photon which becomes a wave throughout the entire earth (this photon will arrive instantly at its destination) through the electron with which it was produced. Associate the probability of presence for the transmission of information. This will help develop the telecommunications sector. It's a new way of transferring information.

The electrical energy created in the earth's atmosphere from the infinitely small is 2268.224314 volts/cubic meter.

$calcul\ de\ la\ taille\ actuelle\ de\ l'univers$

$60 \times 60 = 3600s$

$3600 \times 24 \times 365 \times 13.800.000.000$

$Soit\ x = 3600 \times 24 \times 365 \times 13.800.000.000$

$x = 4,351968 \cdot 10^{17}\ secondes$

La durée de vie de l'univers quand il avait $4798021,136$ secondes est de : $4798021,136$ seconde

$v^2 = 2,302\ 100\ 682 \cdot 10^{41} \Rightarrow v = \sqrt{2,302\ 100\ 682 \cdot 10^{41}}$

$v = 4,798021136 \cdot 10^{20}\ m/s$

$v = \dfrac{d}{t} \Rightarrow t = \dfrac{d}{v}$ $A.N\ t = \dfrac{2,302\ 100\ 682 \cdot 10^{27}}{4,798021136 \cdot 10^{20}}$

$t = 4798021,136\ secondes$

$calcul\ de\ la\ taille\ actuelle\ de\ l'univers$

$2,302\ 100\ 682 \cdot 10^{27} \longrightarrow 4798021,136\ secondes$

$? \longleftarrow 4,351968 \cdot 10^{17}\ secondes$

Soit x la taille de l'univers

$x = \dfrac{4,351968 \cdot 10^{17} \times 2,302\ 100\ 682 \cdot 10^{27}}{4798021,136}$

$x = 2,08808\ 341,5 \cdot 10^{38}\ m$ ou $2,08808\ 3245 \cdot 10^{35}\ km$

NB: Just like in string theory (cannels), there are strings in the infinitely small forming the bricks of the universe. There are several shapes and sizes.

$g(m) = \dfrac{-Gm}{r^2}$

$G = 6,67430 \cdot 10^{-11}\ m^3\ kg^{-1} \cdot s^{-2}$

$m = 2,78 \cdot 10^{54}\ kg$

$r = 2,302\ 100\ 682 \cdot 10^{27}\ m$

Calculons $g(m)$ la gravitation en chaque point de l'univers.

En dimension on a :

$g(m) = \dfrac{m^3\ kg^{-1}\ s^{-2} \cdot kg}{m^2}$

$g(m) = m\ s^{-2}$

Calculons la gravitation :

$r = 2,302\ 100\ 682 \cdot 10^{27}$ est le taille de l'univers quand celui-ci avait $4798021,136$ seconde et sa taille actuelle est de $r = 2,0594\ 79562 \cdot 10^{38}\ m$ calculons la gravitation en chaque point de l'univers

$g(m) = \dfrac{-6,67430 \cdot 10^{-11} \times 2,78 \cdot 10^{54}}{(2,0594\ 79562 \cdot 10^{38})^2}$

$g(m) = -4,37457\ 1777 \cdot 10^{-33}\ m \cdot s^{-2}$

Sa valeur est de $9,81\ m\ s^{-2}$ sur ou dans l'atmosphère terrestre ce qui veut dire que le boson de Higgs l'intensifie dans notre atmosphère terrestre

CONCLUSION

The design of this theorem will make it possible to solve many problems in the field of physics. However, it can be used in the field of health and many other areas.

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Impact of adolescent engagement in sexual and reproductive health program outcomes in Northern Ethiopia

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Adolescent engagement in sexual and reproductive health (SRH) programs is mentioned both as reproductive right and a solution to reducing SRH burdens on adolescent youths in a society. However, in practice, due to gaps in monitoring, evaluation, and the reassessment of program interventions, significant policy and program gaps in sexual and reproductive health (SRH) persist. The factors for these include insufficient program evaluation and follow up measures. This study assessed the outcomes of the engagement of adolescents in SRH programs in Shewarobit town and Kewet district. The study used a mixed methods approach, a quasi-action research and case study design, and a concurrent triangulation fieldwork strategy. Data were collected using desk review of documents, survey questionnaire that was administered to 416 randomly selected respondents and from 15 key informants selected by their affiliation in the adolescent SRH program. The finding from the study indicated that the participation of adolescents in SRH program improved their SRH knowledge, attitude, behaviour and practices. The study thus concludes that improving enabling environment for adolescents in SRH program enhances their influence on the program process and outcomes, and therefore participation of beneficiaries in programs, and continuous monitoring, evaluation and follow up improves the intended program results. The study finally recommends that, from program intervention dimension, participation of the intended program beneficiaries form need assessment to tracking of results is needed. From research dimension, a future study that considers holistic assessment of programs at broader country level is required to adopt the generalization of findings.

Key words: Adolescent engagement, sexual and reproductive health (SRH), program, enabling environment.

INTRODUCTION

Adolescence (10-19 years of age) is a critical period in life where a transition from childhood to adulthood occurs with extensive biological, physical and social transitions (UNCEF, 2021). Adolescence is the time when the youth

face serious sexual and reproductive health challenges such as harmful traditional practices (early marriage, unwanted and early pregnancy, sexually transmitted infections). Also, adolescents at this time lack access to health services, particularly contraception and safe abortions (UNICEF, 2021). Despite accounting for 16% of the global population and being an important age for laying the groundwork for a healthy life, this age group requires special attention, especially on adolescent SRH statistics (UNICEF 2021, 2022). Due to increase in adolescents targeting SRH programs over the last two decades, there has been a decrease in new HIV infections, child marriage and unintended births. However, the improvements in the SRH of adolescents worldwide have been uneven (Cortez et al., 2020). In Sub-Saharan countries, including Ethiopia, about 20% of the adolescent population continuously face SRH problems, and those become a major public health challenge (UNICEF, 2021; Melesse et al., 2020).

In Ethiopia, the 2019 CSA Survey Report shows that there are 21 million adolescent pregnancies, 50% of which are unplanned and 55% of which result in unsafe abortion (CSA, 2021). According to the 2016 Ethiopian DHS report, 40.3% of Ethiopian adolescents marry before the age of 18 and 13% of adolescent girls give birth before they are 15 years old.

The risks of STIs, unintended pregnancies, and unsafe abortion are significant among girls as a result of early marriage and early sexual debut (CSA, 2021). A study in Jimma Hospital in Ethiopia shows that women under the age of 19 are twice as likely as women of other ages to have an abortion in the second trimester (Akwara et al., 2022; Amref Health Africa, 2020). Thus, innovative approaches are needed to solve these SRH problems, including how to make SRH services more acceptable and accessible, including ending the HIV/AIDS epidemic in adolescents (UNAIDS, 2016). For these approaches to be successful, meaningful adolescent engagement in program gap assessment, design, monitoring, evaluation and dissemination of results is critical (Simuyaba et al., 2021). Participation of adolescents in all stages of program cycle enhances opportunities for as well as reduces SRH burdens on them, and enhances their influence on program and policy processes (Chandra-Mouli et al., 2015).

LITERATURE REVIEW

Adolescents' sexual and reproductive health affects not only their physical and mental health, but also their economic well-being, future employment, and the country's social and economic development (WHO, 2018). Also, engaging adolescents in the design and delivery of programs, policies, strategies, funding mechanisms, and institutions/organizations reduce their SRH burdens (WHO, 2018). However, the practice of

adolescent engagement is minimal; and such findings were supported by evidence from Ethiopia, Mali, and Kenya (Admassu, et. al., 2022; Chidwick, et. al., 2022a; Wigle, et. al., 2020).

The reason behind inadequate engagement was mentioned as a result of an insufficient measurement of adolescent. Also, the existing tools and frameworks of adolescent participation in programs are not adequate, and needs revision based on the dynamics in society, cultures and norms (Melles and Ricker, 2018; International Initiative for Impact Evaluation, 2017a). The issue of youth and adolescent participation is recognized as both as a rights and privilege to getting adequate services from the government, and is thus a public health issue of counties (UN Women, 2018). Also, the UN resolutions, focusing on gender and woman rights, consider it as issue of ending violence against the youth (see the pillars of UNSCR 1325). Since adolescent SRH is a public health, and rights concern of government and development actors, their meaningful engagement is essential for achieving the outcomes of SRH programs (Catino et al., 2018; UNICEF, 2021, 2022).

The types of adolescent participation are also important to note. Adolescents' engagement in program phases needs to consider the dynamic intervention, policy and social, cultural, political contexts (Catino et al., 2018). Since the demography of countries manifest pyramid, adolescent engagement needs to align with such pyramid. For instance, in countries like Ethiopia, adolescent and youths together constitute more than 45% of the population (CSA, 2021). Thus, programs need to design engagement activities based on age, ability, preferences, sex and literacy levels of the adolescent youths (Catino et al., 2018; Wong et al., 2010; UNICEF, 2022).

However, the intersectional embeddedness of age, abilities, preference, and task of the youth to opportunities of meaningful participation, the power dynamics in the society is important to consider for impactful youth empowerment (DFID, 2010). Thus, adolescent youths as beneficiaries, partners, and leaders of a program, including the SRH, is not a uniform group, and needs adequate targeting mechanism (Ramey et al., 2017). The current practices in adolescent youth engagement are not adequate in guiding the targeting, monitoring, evaluation and reporting tools that fits for the diversity of adolescent groups in societies, therefore, SRH program outcomes are not achieved as expected and designed (WHO, 2021; Melles and Ricker, 2018). In Africa in general, and in Ethiopia in particular, adolescent and youths reveal that young people are less engaged to contribute to their own wellbeing and development as a result of the inadequate government's commitment and implementation of national youth engagement strategies (Wigle et al., 2020; WHO, 2021).

In order to understand and analyse the impact of meaningful participation of adolescent youths in SRH program outcomes, three theoretical lenses were used.

The first theoretical lens that was employed by the study was the dynamic theory of service provision. The dynamic theory of service provision (Kurgat and Ombui, 2013) acknowledges dynamically and flexibly inclusive targeting of specific categories during interventions. This theory assumes that service provision is dynamic due to various changing and unfolding contexts (such as changes in barriers, policy needs, risk sets, etc.). The changes also require continuous need assessment, flexible and dynamic policy decisions that create both enabling environment for the participants as well as the institutions to achieve their program objectives. The flexibility is needed to address unfolding needs and tailor both targeting of service seekers and strategies of implementation. Adolescent SRH gaps continuously shape and reshape, and are dynamic, self-perceived and demand redressing the current and latent needs of the service seekers (WHO, 2021). In such context, continuous need analysis and integrated adolescent SRH mainstreaming are essential to address the SRH needs of adolescents. Also, interventions need to factor timeliness, tailored-ness, costing, and inclusive targeting modelling to interventions to cater barriers to entitlements to services and this assumption links service provision to program management, analysis and evaluation.

The second theoretical lens that was employed by the study was the program intervention theory of change. The intervention theory of change is a theoretical model developed by NGOs, Donors and philanthropies – but now is used widely by development and service providing actors (Holzer, 2013; Siegel and Welsh, 2012; Eberechi and Stevens, 2016; Ribot and Peluso, 2003). This theory is informed by beliefs about what is needed by the target groups and what strategies would enable them to meet their needs (strategic and practical) further bonding the relationship between organizational missions, strategies and actual outcomes while also creating links between who is served, the strategies and activities that are being implemented and the desired outcomes that are achieved and the enabling environment further created. It also considers the grids of collaboration, partnerships and networking needed for fine-tuning the processes, structure and targeting arrangements on the ground, and most importantly, the participation of the target beneficiaries, in our case, adolescent engagement. In this understanding the theory of change has two broad components, as indicated by Siegel and Welsh (2012) and Eberechi and Stevens (2013). These are:

1. Conceptualizing and operationalizing the three core frames of the theory:

a. Groups served;
b. Strategies (what strategies can accomplish the desired outcomes);
c. Outcomes (what accomplishment is intended to change the gap assessed as a constraint;

2. Building justified and clear relationships among the core components and explicitly expressing them in the way that is tracked, measured and changes observed over target group as well as inform gender analysis.

The third theoretical lens that was employed by the study was the social change continuum model. The social change continuum model is coined from scholars that studies inclusion of discriminated and underserved groups in a program, institutions and the society (Kabeer, 2016; UN Women, 2018). This theory pinpoints the measurement of changes (to target beneficiaries and the contexts around them) by interventions. This theoretical model defines changes in the continuum (observed from an individual level to broader institutional level changes) of processes leading to enabling environment and expected outcomes of the program.

The core of this model is the empowerment of target beneficiaries as individuals and groups (in our case, adolescent female and male youths). The dimensions of this model encompass cognitive (in our case, knowledge, awareness and information on SRH), psychological (social beliefs and behaviours perpetuating their SRH attitudes, behaviours and practices), and institutional (ability to influence the intervening institutions to create an enabling environment, engage them in the program and benefits). The theory further assumes that addressing these dimensions manifests holistic changes in the intervention process as part of knowledge-making, attitude and behaviour change, and inculcation of the SRH practices, leading to the upholding of their rights to and solutions to the SRH gaps in the specific cultural and policy/program context (Nussbaum, 2011; Kabeer, 2016; UN Women, 2018).

Progressive scholars of social inclusion in program intervention context argue that reference to informed intervention and outcome (impact) requires documentation and flexible and dynamic gaps analysis continuously and progressively.

Such analysis and intervention practice aims at revisiting exclusion as a continuous but also a never-ending change continuum that ultimately leads to a fit in the dynamics of unpredictable and unfolding social changes, in which adolescents grew and transform. In this respect, interventions need to involve a participatory, stakeholders' ownership building, change aware and context fitting solutions. The progressively changing demands of adolescents, in our case, need a continuous revision and reformulation of SRH program activities. In a broader stance, this model sets platforms, agenda, in line with the micro and macro-level changes and the tracking of the overall enabling context.

This study thus assessed the impact of adolescents' participation in sexual and reproductive health program outcomes in Northern Ethiopia. The findings of this study will serve as an input for adolescent focused programming as well as adolescents' participation in SRH programs
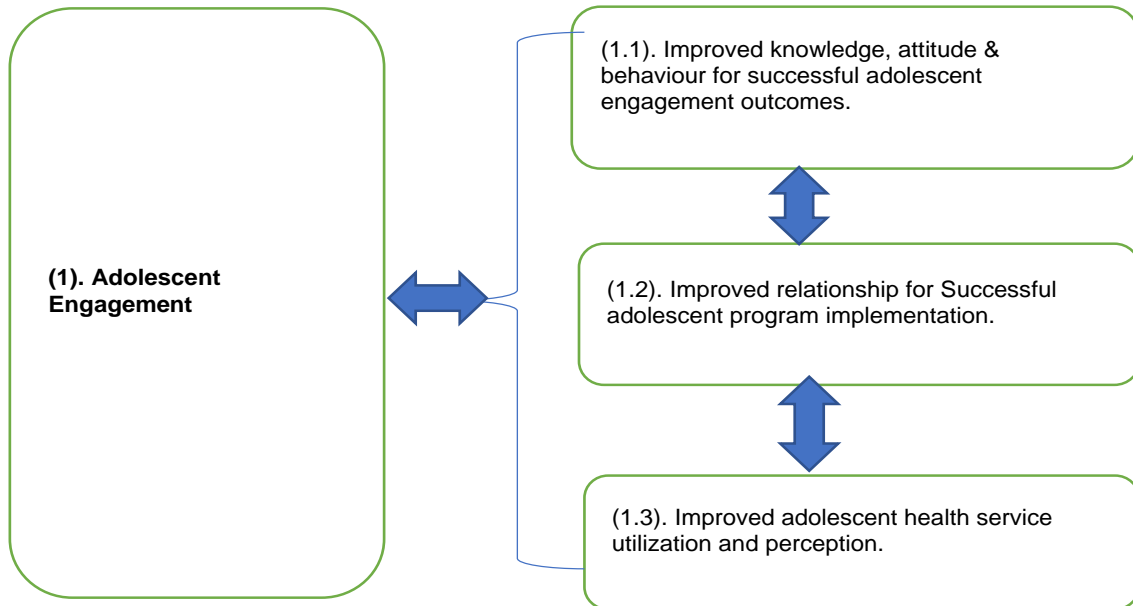
Figure 1. Conceptual framework.
Source: Author's Sketch from review Literature, 15 Feb 2023.

thereby to influence policy makers, and their cultural/ social contexts. The analytical gaps and the framework in the subsequent sections were based on the understanding of the three theories reviewed above. These theories were also used as a lens to design the methodology, the analysis and interpretation of the data results. Thus, the analytical framework of the study was as follows, as in Figure 1 above.

The framework design first considered the analysis of the enabling environment for adolescent engagement in the program, the policy measures/practices and the outcomes in terms of changes in SRH knowledge, attitudes, behaviours, and practices. The grids of analysis in the framework components focused on whether the measures the improvements in the SRP practices by adolescents are associated with their engagement in the program from its gap assessment, design, launching, implementation, monitoring and evaluation. In regard to sustainability of the improvements in the SRH outcomes identified above, changes in parent, community and institutional contexts were also considered in the analysis. The whole intervention and outcomes of the program was analysed in the framework of dynamic service provision (policy practice), program theory of change (need assessment to monitoring and evaluation) and the social continuum modelling (the program's alignment to changes in social, policy, institutional, community.

The framework design set the key gaps for this study from literature and designed key inquiries (questions). The gender lens considered the gender gaps in the frameworks of understanding (knowledge), thinking (attitudes), decisions and actions (behaviour and practices including intervention policy response/practice) and continuous awareness and creation of enabling environment (SRH information and actions). In considering this analytical framework, the study assessed the intended outcomes of the intervention, focusing on whether the program engaged adolescents, and whether in the intervening institutions created an enabling environment for their engagement, which is intended to contribute to the improvement of the SRH knowledge, attitude, behaviours and practices of the adolescent that are beneficiaries of the program. In doing so, also, the analytical focus considered the dynamic and changing nature of SRH demands of adolescents, and the continuous changes of societal, community, organizational, parental and program demands in the specific context of the study.

MATERIALS AND METHODS

A mixed study approach and concurrent triangulation study design was used to assess the outcome of adolescents' engagement in SRH programs because it allows for the confirmation, cross validation, and corroboration of findings for a better result. Initially, desk review was used to analyze and substantiate evidence of how adolescent engagement in SRH programs improves program outcomes, which then were used to best describe the results obtained from both quantitative and qualitative data. Both quantitative and qualitative data was collected separately in the field at the same time, then triangulated after analyzing both data sets and interpreting the data by pinning the similarities and incongruences between the two data sets, comparing and contrasting results and if there also complementarity.
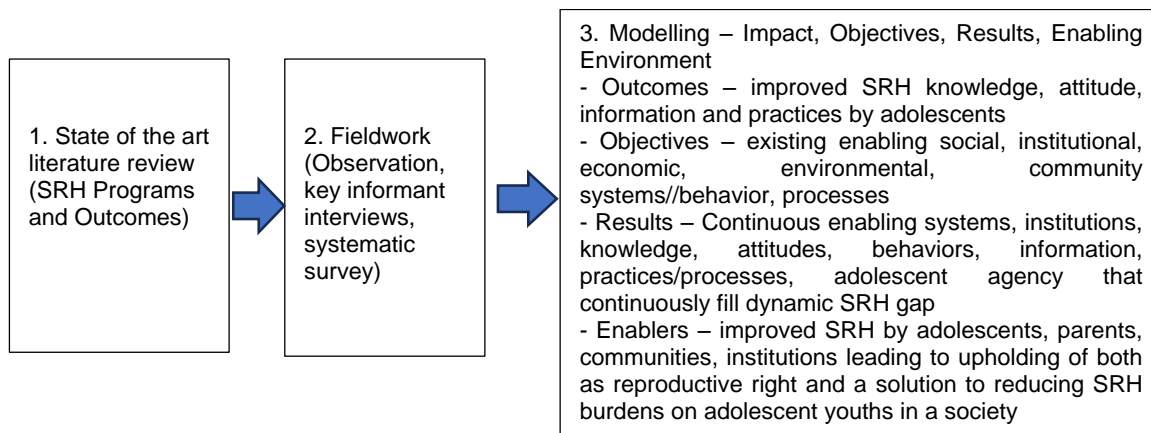
Figure 2. Author's sketch of research design [2023].

Considering the theoretical tenets reviewed in chapter 2 (2.6), the data analysis followed a program theory of change within the framework of dynamic service deliver and social change continuum modeling following.

The study, as indicated in Figure 2, employed a mixed methods approach. In terms of design, it employed a case study-driven quasi action research. The field work strategy (application of the approach and the design in the field) employed by the study was a concurrent triangulation strategy including a parent and youth transformation aspects).

This study used both secondary and primary data, with secondary data obtained from a desk review of various reports and studies focusing on evaluating programs that work by engaging adolescents to determine how involving adolescents in SRH programs improves program outcomes. Using a prepared questionnaire for adolescent engagement in SRH programs as well as other key stakeholders, including program administrators, the primary data were used to assess adolescent engagement in SRH programs and the status of the enabling environment in the study area as well as in the analysis of engagement outcomes.

All of the adolescents and programmers that live in the study area and are in clubs related to sexual and reproductive health make up the source population. Adolescents between the ages of 15 and 19 who enrolled in chosen wored as in the academic year 2022–2023 as well as all in-school and out-of-school adolescents between the ages of 15 and 19 who was participating in youth clubs, power to youth program and engagement of adolescents in sexual and reproductive health project living in the selected areas of the program make up the study population. For the qualitative study selected adolescents who participated in the quantitative study, youth club leaders and programmers were study population. Any participant who has any hearing and visual impairment and cannot engage or communicate was excluded from the study.

The sampling techniques that were used for sampling were both probability and non-probability sampling method where multi-stage sampling and intensity purposive sampling technique was used respectively. A total of 396 sample size was estimated based on Slovin (1960) formula of assumption Based on the SRH program that was being implemented and due to the political instability, Shewarobit town and Kewet district was selected for this study. Both the town and the district were supported by the Power to youth project, are diverse in sociocultural characteristics including urban (Shewarobit town), rural (Yelen kebele) and pastoral features Abiy Atir kebele. Amref Health Africa led the project in Tere Kebele in Kewet district and all Kebeles in Shewarobit town. Whereas, Fana Addis Tiwulid Ethiopia implementing in two primary schools in Kewet woreda (Sefiberet and Yelen primary schools). Then simple random sampling was used to select required number of samples in each selected schools and youth clubs after proportional allocation and equal allocation of study population for each selected woreda youth clubs and schools.

For the qualitative study intensity purposive sampling method were used with in depth and key informant interview until the information gets saturated. With the assumption of rule of thumb, 15 key informant interviews were conducted. Total of 8 youth club leaders and adolescents was selected to evaluate their engagement in the programs with supportive explanations from the youth leaders, and 7 interviews was conducted with youth club officials and programmers since there were key stakeholders and runners of the program and where the power of youth project is working. A single population proportion formula was used to determine the sample size. The percentage of engagement of adolescents was taken as 50% in Ethiopia since the researcher couldn't find other researches done on this area, 95% CI and 5% degree of precision. The percentage of engaged adolescents are assumed 50%.

$$n = \frac{Z\alpha/2^{p(1-p)}}{d^2} \tag{1}$$

Where; n the minimum sample size required; Z a/2 the critical value for a given confidence interval; P, proportion value; d margin of error.

So, our- Z a/2 will be 1.96 if we take 5% or confidence interval of 95%:

n = (1.96)2 x 0.5(1-0.5)/ (0.05)2   (2)
  = 3.8416 x 100
  = 384

The non-response rate=10% which will be 38. Then by adding none-response rate, the final sample size will be:

384+38=422   (3)

The dependent variable is adolescent engagement that results in improved SRH knowledge, attitude, behaviour, relationship, and SRH practices. In detail the dependent variables as associated with independent variables as follows.

The secondary data was collected from review of program documents and reports as well as empirical and policy literature.

The quantitative primary data was collected by trained enumerators using structured questionnaires. To ensure the consistency of the tools, the questionnaire was written in English, translated into Amharic, and also pre-test was conducted on 5% (20 participants) of the samples.

The pre-test, the use of experienced and trained enumerators reduced potential biases during data collection and ensured data quality. To preserve data completeness, clarity, and consistency, the completeness of the questionnaires and data collected were reviewed daily. The following day, before starting data collection, any errors relating to clarity, ambiguity, incompleteness, or misunderstanding were corrected. For the qualitative study the researcher stayed in the field for long, data collected were checked and peer briefings were done after the analysis.

A descriptive method was used for the quantitative and a thematic analysis was used for the qualitative data analysis. The quantitative data was cleaned, and entered into an excel sheet, and then imported to STATA Version 26. The demographic and other characteristics of the participants were analysed using frequencies, percentages, means, and standard deviations. Furthermore, the dependent variable which is adolescent engagement and independent variables such as knowledge, behaviour was analysed using descriptive statistical method. Furthermore, a chi-square test was used to study the association between the dependent variable and independent variable.

For the qualitative study, data were transcribed and translated which lead to anonymization of the data simultaneously code book were developed, and the data re-read then coded using Atlas Ti software, which reduces the data. Thematic analyses were used to analyse the data and give meaning to it. Coded data categorized and themes formed which emerge from the data analysed.

Ethical clearance and approval were obtained from Skill mart international college ethical committee and form power to youth project where the evaluation took take place. Both oral and written informed consent and assent was obtained from each study participant including adolescents who are under 18 years in which both parental and participant informed consent was obtained, and all participants were informed about the purpose of the study, the benefits they would gain, possible harms that would cause and their right for a decision on participating in the study. All the information collected from the study participant was kept confidential.

RESULTS AND DISCUSSION

DATA RESULTS

The thesis was aim to assess the outcomes of adolescents' engagement in SRH program, and analysing and substantiating evidence on whether adequate adolescent engagement in the SRH program is associated with improved knowledge, attitude, and behaviour of the adolescents in Shewarobit town and Kewet district of Northern Ethiopia.

The study identified the gaps of the program implementation in terms of adolescent engagement and discerned actionable areas for the improvement of the SRH program under implementation; specially, by creating enabling environment for adolescent engagement in the program and improve program outcomes. The study thus inquired the status and creation of enabling environment of adolescent engagement, and the contributions of creating enabling environment and youth engagement for the improvement of the outcomes of the SRH program under implementation in the study site.

The study employed a self-administered survey questionnaire for 422 sample respondents and conducted a key informant interview with 15 participants. Out of the 422 sample respondents, 416 filled the questionnaire, while four of them declined their response, and two of them were excluded because of incomplete data. Thus, the response rate was 98.6% (416 adolescents participated and completed the survey questionnaire). The attrition rate was thus 1.4% (6 adolescents were excluded). Similarly, out of 15 key informant participants (youth club leaders, youth health officials and programmers), 100% (all 15 participants) participated in the key informant interview.

In the following sections of this chapter, we present the data results obtained from the field. These results cover various aspects, including adolescent socio-demographic characteristics and family background of the respondents, the status of adolescent engagement in the SRH program, the creation of an enabling environment for adolescent participation, and the outcomes of the program. Specifically, we explore how the participation of adolescents and the establishment of an enabling environment have influenced improved adolescent SRH knowledge and changes in SRH behaviours and attitudes in the study area.

After substantiating evidence on these domains, the study analysed the contribution of the SRH program implemented in Shewarobit Town and Kewet District in the improved SRH knowledge, behaviours and attitudes.

Profiles of survey participants

Socio-demographic Profiles of adolescents

In the first domain of socio-demographic characteristics of adolescent SRH program beneficiaries, sex, age, education level, marital status and religious affiliation were assessed. As the data results in Table 1 show, the first characteristic assessed was age. The variations of the age of the respondents were analysed using standard deviation and mean.

Thus, the age of respondents ranged from 15 to 19 years with mean age of 16.71 ± (1.297 SD) and median age of 17. The second variable assessed, as indicated in Table 1, was the sex of respondents. To present the outcomes of the program and analyze the enabling environment and adolescent engagement in terms of gender characteristics, an equal number of male and female adolescent participants participated and completed the survey questionnaire. Consequently, the ratio of male to female participants in the study was 1:1, meaning that 50% of the participants were male, and 50% were female adolescents.

The third, fourth, and fifth socio-demographic variables

Table 1. Socio-demographic characteristics of survey participants (2023).

Socio-demographic variable	Frequency	Percent
Age of survey respondents		
15-19	416	100
Sex of survey respondents		
Male	208	50
Female	208	50
Educational level of survey respondents		
Secondary	402	93.9
Primary	14	3.36
Schooling status of survey respondents		
In-school	346	83.17
Out-school	70	16.8
Religion of survey respondents		
Orthodox	351	84.3
Muslim	65	15.6

Source: Own field survey result (2023).

assessed were the participants' education status, marital (civil) status, and religious affiliation. Among the total participants, nearly nine out of ten had received formal education. The majority of adolescents (93.9%) were attending secondary school, while a smaller percentage (3.36%) were attending primary school. Regarding marital status, the majority (92.5%) were not married, with the remaining 4.8% being married, all of whom were adolescent females. In terms of religious affiliation, more than half of the participants were Christian (50.0%), while 15.2% were Muslim.

The study made certain assumptions, including that an adolescent's schooling status, such as being enrolled in formal education, is associated with factors like family educational background (having educated parents) and residential location (urban or rural). Drawing from existing research on gender and education, the study assumed that adolescent females who are out of school may be more likely to engage in paid or unpaid work to support their households. Additionally, the study hypothesized that adolescents in urban areas are more likely to be enrolled in school compared to those in rural areas. These assumptions are expected to influence various program outcomes, including the creation of an enabling environment, changes in SRH attitudes and behaviours, and knowledge of SRH. In the first domain of socio-demographic characteristics of adolescent SRH program beneficiaries, status of beneficiaries in schools versus employment, residence (urban or rural), education status of mother and father of the adolescent beneficiaries of the SRH program were assessed. From the data results in Table 2, the majority of the respondents 80.80% were students (are in school) while the rest 19.2% were out of school. From those out of school, 12.1% were

unemployed (engaged in unpaid work) while the rest 4.3% of them were employed (engaged in paid work).

Regarding the educational status (level) of parents (mothers and/or fathers), as indicated in Table 2, most of the parents of adolescents, 34.8% of fathers, and 35.5% of mothers cannot read and write. At the same time, more than two-thirds of the adolescents, 80.8% have parents (mother and/or father). Out of the adolescent participated in the study, 35.6% currently live either with a mother or a father, while the rest 64.4% currently live with both of their parents. From other studies on the difference between parents' education based on Sex which determines the engagement status of adolescents, the study assess the difference in terms of sex of adolescents and their parents' educational status where there was no significant difference seen in terms of sex.

Socio-demographic characteristics of key informants

A total of 15 key informant interviews were conducted with SRH program experts, adolescent club leaders, students and teachers, related to SRH program beneficiary adolescents. In order to capture diverse views and perspectives, the key informants were identified based on sex, age, education level, occupational status and participation in the leadership of activities related to the SRH program in the study location.

The selection criteria were identified based on the assumption of their level of involvement on adolescent engagement in SRH programs, their perspectives on the outcomes of the program, the status of enabling environment and the improvements in adolescent SRH knowledge, behaviour and attitudes. Out of the 15 key

Table 1. Residential and family background of survey respondents (2023).

Living area and parent information variable	Frequency	Percent
Residence of survey respondents		
Urban	190	45.67
Rural	226	54.32
Adolescents' father education level		
Secondary	61	14.6
Primary	140	33.6
Can read and write	66	15.86
Can't read and write	149	35.81
Adolescents' mother education level		
Secondary	33	7.93
Primary	191	45.91
Can read and write	40	9.61
Can't read and write	152	36.53

Source: Own Field Survey Result (2023).

Table 3. Socio-demographic characteristics of key informants (2023).

Socio-economic and demographic variable	Frequency	Percent
Sex of key informants		
Male	9	60
Female	6	40
Age of key informants		
18 - 25	9	60
26 - 31	6	40
Education level of key informants		
Secondary	5	33.3
BA/BSc	8	53.3
MA/MSc	2	13.3
Occupational status of key informants		
Student	6	40.0
Teaching	5	33.3
Programmer	4	26.7
Role of the key informants in the community		
Youth Club Leaders	6	64.50
Teachers/SRH Sensitization	5	35.50
SRH Programs	4	100
Participation in the program		
Yes	271	64.50
No	145	35.50
Total	416	100

Source: Own Field Survey Result (2023).

informant interviews conducted, six interviews involved SRH youth student club leaders, four involved SRH program experts and five involved teachers.

As the data results in Table 3 demonstrate, sex, age,
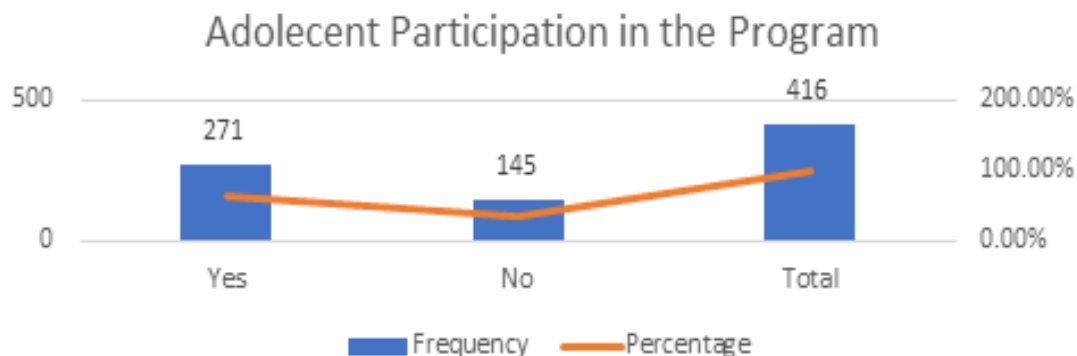
Figure 2. Adolescents engagement in SRH program in North Shoa (2023).
Source: Own Field Survey Result (2023).

Table 4. Adolescents engagement in SRH program in North Shoa by Sex (2023).

Adolescent's Participation in SRH …)	Female		Male		Total	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Program design						
Yes	30	36.5	52	63.41	82	19.71
No	173	51.7	161	49.69	334	80.28
Program implementation						
Yes	65	43.04	86	56.95	151	36.29
No	149	53.79	128	46.20	277	66.58
Monitoring and evaluation						
Yes	35	38.04	57	61.95	92	22.11
No	168	51.85	156	48.14	324	77.88

Source: Own field survey result (2023).

education, occupation and involvement in the program by key informants were assessed. From the data results, the age of the key informants ranged from 18-39 years with a median age of 30 years. Almost one third of the participants were adult and in the youth category. Out of the key informants interviewed, 40% were females while the rest 60% were males.

Regarding education level of key informants, 33.3% attend in secondary education. 53.3% were BA/BSc holders and the rest 13.3% were MA/MSc holders.

In terms of occupational status of key informants, 40% were students, 33.3% were teachers and 26.7% were SRH program experts, regarding the role of the key informants in the SRH program, 40% were youth student club leaders, 33.3% were SRH sensitization/awareness creation teachers and the rest 26.7% were SRH program coordinators (facilitators).

The youth are SRH student club leaders, the teachers are facilitator and leaders of the school clubs related to sexual and reproductive health, and the programmers are from the non-governmental organizations working on SRH programs as a facilitator of the programs that work

on SRH with schools in the study location.

Descriptive and inferential data results

Adolescent engagement in SRH programs in the study area

The engagement of adolescents in the SRH program was assessed during the fieldwork. From the data results, in Figure 3, 271 (65.4%) of the students have never been engaged in any sexual and reproductive health programs (Figure 3) and never heard of any SRH programs.

The results presented in Figure 3 were further supported by the interview narrative reports. The interviewees, who were youth club leaders, indicated that most adolescents were actively involved in the implementation and monitoring and evaluation stages, but not as much in the design stage. For instance, a 19-year-old youth club leader from Yellen corroborated the findings presented in Table 4 and Figure 1 with the following statement:
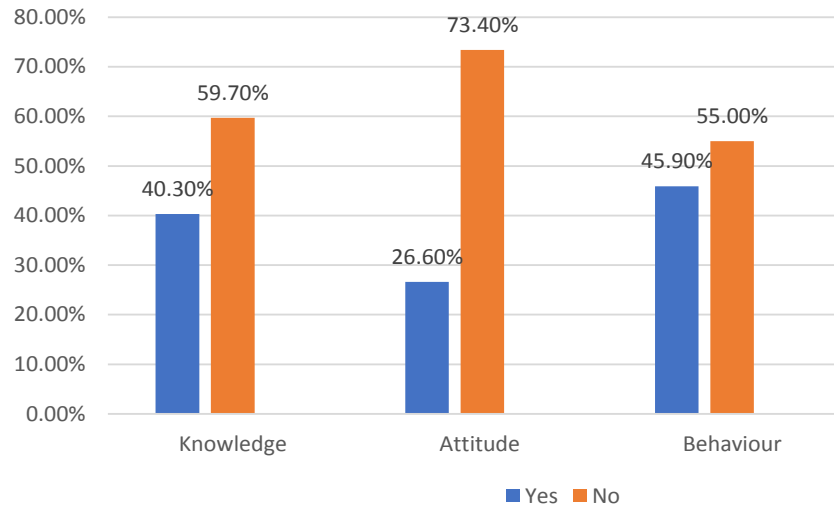
Figure 3. Adolescents' SRH Knowledge, Attitude and Behavior of adolescents.
Source: Own Field Survey Result (2023).

"…we usually create awareness in the community through our club by preparing dramas, poetries and other art related works otherwise we have never been consulted or participate in such kind of program planning session…"

The study also assessed the engagement of adolescents in program design, implementation, monitoring and evaluation stages. Regarding their participation in program design stage, as indicated in Table 4, from the total participants, the majority 334 (80.28 %) of them reported that they have never been consulted or participated in the design of SRH program, while only 94 (22.5%) of them participated in the design of SRH program.

The participation in project implementation stage, according to the results in Table 4, is relatively higher than the participation of the adolescents in program design stage. Out of the respondents, 151 (36.29 %) mentioned that they have been engaging in the SRH program implementation, while 277 (66.5%) of them have never been engaging in this stage. Out of the respondents, as indicated in Table 4, 77.8%% were mentioning that they have never been engaging in the SRH monitoring and evaluation stage while the rest 22,11% participated in this stage.

The study analysed gender variation in the participation of the adolescents in the SRH program. Out of the respondents, 34.8% of adolescents were engaging in SRH programs. In terms of gender variation, most of the participants were male which constitute 86 out of the 145, which is 59.3% of those participating. Similarly, male adolescents showed relatively higher levels of engagement in the design (63.41%), implementation (56.95%), and monitoring and evaluation (61.95%) stages compared to female adolescents. However, a higher level of engagement was observed in the

implementation stage of the SRH program for both genders. Interestingly, these findings contradict the data from the qualitative study in which teachers reported that female adolescents were more engaged than male adolescents in the school clubs due to current empowerment practices and the enabling environment created for female students. For instance, a 32-year-old male teacher stated:

"….we encourages female students to participate in the school clubs since they are more vulnerable to SRH problems. As a result, more female students participate in the clubs than males…it is also because of clubs are formed usually targeting females thus the program created an enabling environment for them…"

This result confirms the findings of existing studies regarding failures in parity in targeting and tracking or progress (program results), which UN Women Study Report (2021) terms as a reporting fallacy and a gap between practice and rhetoric regarding gender parity. The variation in engagement of adolescents in SRH program in terms of marital status, educational status, religion, residential location and employment status were assessed in the study based on other findings.

Thus, the difference was observed to be significant, as in Table 5, in which all female adolescents who are married 29 (6.97%) don't engage or have never been engaged in any SRH programs. It is supported by a finding from programmers and youth clubs that adolescents would leave the club or won't be engaged at all if they get married because of their ability to make decision by their own for their engagement. In a similar way, adolescents who are in primary school are less engaged 5 (1.2 %) than that of secondary school adolescents 148 (35.5%), this is also shown by the

Table 5. Adolescents' Socio-demography and Participation in SRH programs.

| Socio-demographic variable | Participation in SRH program | | | |
| | Yes | | No | |
	Frequency	Percent	Frequency	Percent
Marital status				
Married	0	0		
Not Married	153	36.77	263	63.2
Educational status				
Primary	5	1.20	9	2.16
Secondary	149	35.81	253	60.81
Religion				
Christian	130	31.25	221	53.12
Muslim	22	5.28	43	10.33
Employment status				
In-school	118	28.36	228	54.80
Out-school	30	7.21	40	9.61
Area of living				
Urban	90	21.63	100	24.03
Rural	61	14.66	165	39.66

Source: Own field survey result (2023).

qualitative study where adolescents who are in primary school have less possible engagement areas which is school club than that of secondary school where they can be engaged in both youth clubs (out-side the school), school clubs as well as in programs of NGOs.

The variation related to socio-economic and socio-demographic variables was also seen in adolescents who are students (In-school) 118 (28.36%) as well as out-school (employed or unemployed) 30 (7.21%).

"…In here most of them are early aged (<14) Children, who don't reach the age for SRH…even organizations who work on SRH want those who are old and request…" (24 years old, Male from Yellen)

In a similar case, it was mentioned that the youth clubs, which are potential engagement spaces for adolescents outside of school, are primarily formed for artistic purposes where adolescents participate in various art-related activities alongside SRH activities. However, due to these artistic activities, some religious groups prefer not to engage in such clubs. This statement was supported by a 36-year-old Health officer from Shewarobit town:

"…The club is formed by culture and heritage with the main purpose of preventing adolescents from spending their time in bad places with Art based activities, but later on the idea of SRH came into this clubs with NGOs, and they started to have SRH sessions alongside the ART, so

other religion adolescents are less likely to join...Even their parents won't let them."

Outcomes of adolescent participation in SRH programs

The study assessed the improvements of the SRH knowledge, behaviour, attitudes, and practices and also analysed whether the improvements are linked with their engagement in the SRH program implemented in the area. From the total participants, 221 (59.7%) of the adolescents have knowledge on SRH (Figure 4). The majority 315 (73.4%) of them reported having negative attitude toward SRH, while 108 (25.3%) have positive attitude toward SRH. For 236 (55.0%) and 180 (45.9%) of adolescents, their risky sexual as well as abusive behaviour and with no risky behaviours were the major findings in the outcome of SRH, respectively. This finding supported by the qualitative finding where, Key informants consistently mentioned that adolescents lack the knowledge on SRH as well as their rights in SRH, where they are more likely to be vulnerable to risky sexual behaviours.

As indicated in Table 6, whether the participation of adolescents in the SRH program contributed to the improvement(changes) in their SRH knowledge, attitudes and practices were assessed, and the contribution analysis was conducted.

The data sets in Table 5 show that the participation of
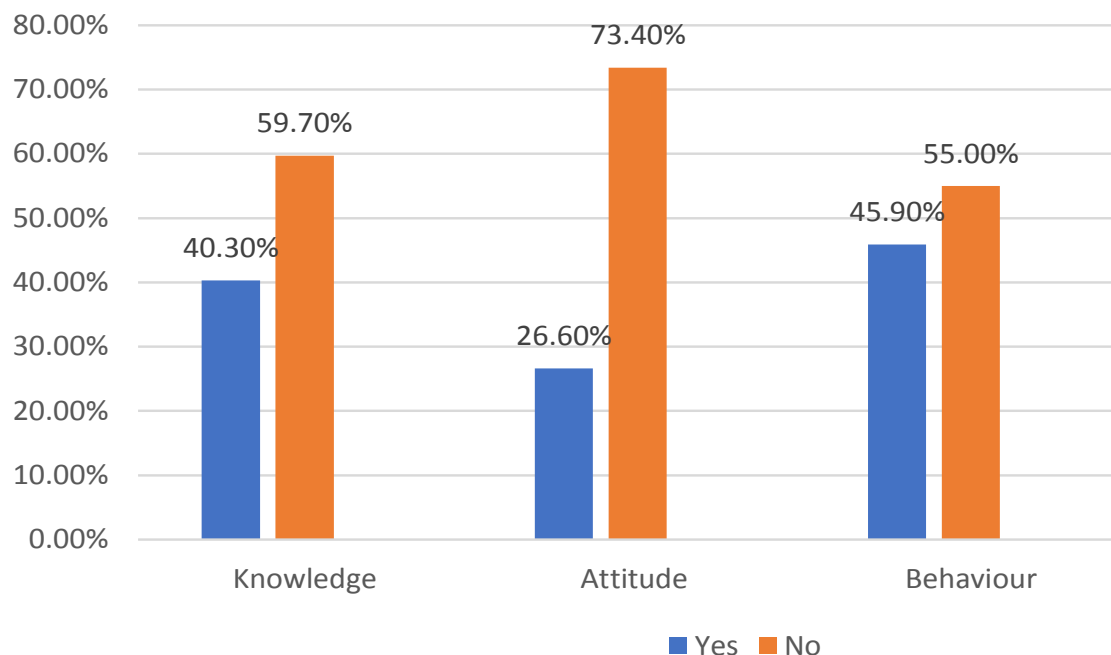
Figure 5. Adolescents' SRH knowledge, attitude and behavior of adolescents.
Source: Own Field Survey Result (2023).

Table 2. Changes in Adolescents' SRH Knowledge, Attitude and Practices.

Contribution of adolescent participation	To changes in SRH								
	Knowledge			Attitudes			Practices		
	No	Yes	Total	No	Yes	Total	No	Yes	Total
No	189	79	268	186	80	266	191	75	266
Yes	32	116	148	128	21	149	45	105	150
Total	221	195	416	315	101	416	236	180	416

Source: Own Field Survey Result (2023).

Table 7. Contribution of adolescent engagement to SRH program outcomes.

Variable	Chi-square test	Degree freedom	*p* value
Sex of the adolescents	3.514	1	0.010*
Educational status of adolescents	17.492	2	0.001*
Schooling status of adolescents	5.546	6	0.465
Marital status of adolescents	9.167	4	0.007*
Area of living	16.199	4	0.003*
Attitude	30.105	2	0.001*
Behaviour	33.546	4	0.001*
Religion of the adolescents	5.753	4	0.218

Source: Own Field Survey Result (2023).

the adolescents in the SRH program contributed to the improvement (changes) in the knowledge of 64.4% (268), attitudes of 63.9% (266) and practices of 63.9% (266) of the beneficiaries, Thus, for those who participated in the

SRH program, about 3 in 5 of the beneficiaries benefited, in terms of changes in knowledge, attitude and practices, and therefore, the contribution of the program is relatively significant in inculcating the intended SRH behaviours of the adolescents.

Adolescent profiles and outcomes of the participation in SRH programs

The results of the chi-square test of association revealed that sex of the adolescents, educational status, marital status, and area of living, knowledge of adolescents on SRH, Attitude and Behaviour of adolescents have statistically significant association with, adolescents' engagement in SRH program as summarized in Table 7. The schooling status and religion of adolescents had no statistically significant relationship.

Enabling environments of the participation of adolescents

It was mentioned by other study findings that adolescents should get an enabling environment to be engaged in their SRH programs which was assessed in this study. In SRH program adolescents were engaged mostly in implementation stage of a program where the program designed to engage adolescents in lobbying, advocacy such as preventing SGBV, eliminating child marriage and FGM, recognition for sexual right as well as in decision making at youth club levels. In addition to this the program provide peer to peer education and Trainings so as to capacitate and enable adolescents to identify their own SRH problems such as HTPs and draw a solution with having enough awareness about engagement. For this case, studies conducted in Bahir Dar, Ensaro and Afar revealed that respondents who were engaged in CSOs felt that their engagement was meaningful.

During the program's implementation, adolescents faced challenges in their engagement due to various factors. These challenges included issues related to adult-adolescent relations, where it was reported that adults often listened to adolescents but did not always consider their input, leading exercises or making decisions without consulting the adolescents who were the direct beneficiaries. Additionally, district gender norms and social norms played a role, as the community sometimes viewed females as lacking the ability to perform in the same way as men. As revealed in the interviews, the local community often holds the belief that women lack the capacity to instigate positive changes within the community. Unfortunately, girls are not granted the opportunity to engage with their parents and the community. As they are unable to speak publicly about their rights, they continue to be the primary victims of harmful traditional practices.

The mid-term evaluation report of the program refines that the community in the area (adults) as such that adolescent's discussion with parents on these topics were less common, but took place. Parents were the main decision makers though adolescents tended to push their voice on topics that affected them. The qualitative findings of other studies also show that youth-led organizations had little involvement in policymaking. And in addition, government departments were not willing to involve youth-led associations. Organizations initiated and led by youth received less attention than government-initiated youth associations such as youth federations and leagues. In this case a 35 years old programmer told:

".... adolescents are more open to discuss with their peers they usually don't get along with the community in same way adults doesn't count them in serious terms to involve them in leadership or decision-making areas…"

The limited experience of adolescents in decision-making and the need to enhance these skills, as well as the attitudes of some adults towards adolescents' contributions, were the main areas expected to be addressed by the program. In response, a parents-youth forum was established to empower adolescents to voice their concerns within the community, and awareness campaigns targeting adults, particularly parents of adolescents, led to increased adolescent engagement in community youth clubs to address SRH issues. Additionally, as part of the program, a societal committee was formed, which includes adolescents and youths as committee members, allowing them to voice their concerns and participate in decision-making activities aimed at addressing SRH-related issues in the community.

In similar way, on this study 87(19.6%) of them have mutual agenda with that of adolescents which is including same set of objectives to work on in a program which should be improved through other programs, that are working on the area for the improvement of adolescents' knowledge on SRH. In addition, the youth clubs under the SRH program have been performing in direct way of improving knowledge, attitudes and behaviours of adolescents towards sexual and reproductive health were showed by the study where adolescents who engaged in SRH programs with appropriate enabling environments from family, community and government levels have improved set of knowledge, attitude and behaviour than adolescents who are not engaged. There for in order to enable adolescents engage in such program's parents-youth forums should be conducted as woreda or zonal level with adequate attention and resource also in similar case parents' awareness should be raised to allow their Children's engage. Furthermore, awareness should be created in the community to resolve the gender variation, considering empowerments of female adolescents in place. In general, the sustainability of adolescents SRH
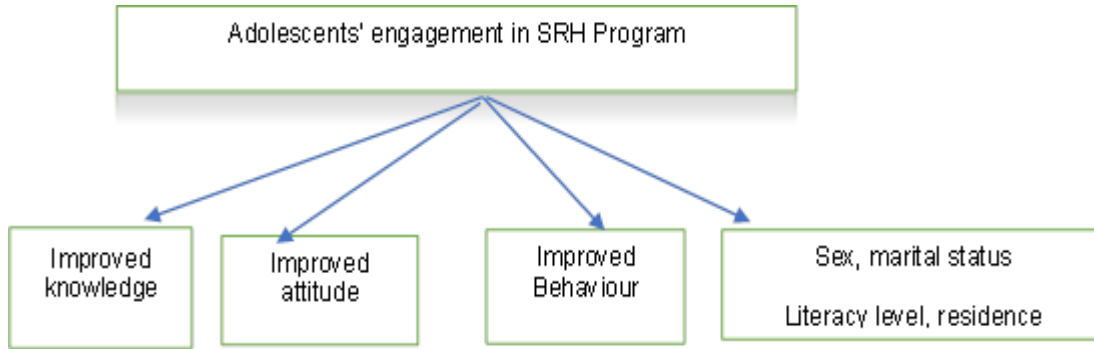
Figure 5. Adolescents' SRH Knowledge, attitude and behavior of adolescents.

information should be set as a priority because of sustainability issue which means most SRH programs as well as engagement of adolescents are being included mostly at CSO level which make the programs as well as projects time-bounded and conducted with limited aspect and budget which could in turn affect adolescents' knowledge, attitude and practice in time sequence unless adequate attention and concern is given from the government.

DISCUSSION

This study is one of the first mixed studies to assess the outcomes of adolescents' engagement in sexual and reproductive health programs. It extends the evidence base by illustrating knowledge, attitude and behavior which are the outcomes of adolescents' engagement in sexual and reproductive health programs. The outcomes were improved in knowledge, attitude and behavior in SRH (Figure 5). Adolescents who were engaged in the program were found to have better knowledge in SRH than those adolescents who were not engaged. In a similar way adolescent who were engaged in the program were seen to have positive attitude and improved behavior. In relation to this, in the finding of the study, males, unmarried, secondary school adolescents as well as adolescents who live in urban areas were found to be more engaged in SRH program. The hypothetical relationships in Figure 5 depicted based on the findings from this study.

Out of 416 selected adolescents who enrolled in the study, 271 (65.4%) reported having no engagement in SRH programs, 34.8% were engaged and this was higher than baseline study conducted in Bahir Dar, Asayita, Ensaro and Semera which was 16%, but it is relatively the same with particular study in Bahir Dar (36%). Also, in terms of gender variation in this study most of the participants were males 86/145 (59.3%), this finding also agrees with same baseline study conducted in Bahir Dar as well as a qualitative study conducted in Malawi on

Youth participation in sexual and reproductive health: policy, practice, and progress but this it contradicts with the study finding of the qualitative section of the study which state females are being empowered and encouraged to engage in SRH programs than male (Amref Health Africa, 2020; Wigle et al., 2020). As a result, the difference could be due to the perceptions of the key informants taken including the programmers and Health officials.

In this study, around 36.29% of adolescents engage in implementation levels of programs than in design and monitoring and evaluation level which is supported by a study conducted in Kenya on assessing the roles of adolescents' engagement in SRH programs stated as adolescents are being engaged as health promotion/peer education playing supportive role in a program instead of their engagement in leadership, consultation, and decision-making roles (Bulc et al., 2019). All adolescents 29(6.97%) who are married have never been engaged in SRH programs and this is in line with studies conducted in Kenya, Rwanda, Tanzania and Uganda on exploring engagement of adolescents in health research. In addition to these adolescents with limited formal education and those living in rural areas are not getting equal access for engaging in SRH programs which is similar with previous study (Chidwick et al., 2022b).

In the study, it was observed that adolescents engaged in SRH programs exhibited greater knowledge, more positive attitudes, and improved practices related to SRH. This observation was supported by the chi-square results, indicating an association between engagement and knowledge, attitude, and practice, which aligns with the findings of a systematic review by Liebenberg et al. (2017) involving 32 empirical studies. The review showed moderate effects of student participation, including increased self-esteem, social status, and life skills. Additionally, a study on adolescent engagement, conducted as an environmental scan in 2022, found that adolescents engaged as decision-makers, leaders, and implementers in SRH programs demonstrated better outcomes in terms of knowledge, as reported by

Peterson et al. (2020). Similarly, reports from the Center of Excellence, based on various reviews of youth engagement and health outcomes, have found that adolescents who engage in sexual health programs are more likely to avoid risky sexual behaviours, as noted by the World Health Organization (WHO, 2018) and UNICEF (2022).

Conclusion

The findings of this study demonstrated that adolescent engagement in SRH programs led to improved knowledge, attitudes, and practices in sexual and reproductive health. Out of the total 416 participants, 116 were engaged in SRH programs and possessed knowledge about SRH. Among the participants who were not engaged in SRH programs, over half (268 out of 416) had a negative attitude, whereas 189 had no knowledge of SRH. Additionally, 121 participants who were engaged in SRH programs had a positive attitude, and 105 demonstrated better practices in terms of sexual risky behaviors and SRH programs.

It was observed that male adolescents, those living in urban areas, and those attending secondary school were more likely to be engaged in SRH programs and had better knowledge and practices. The majority of adolescents had little to no knowledge about SRH, which posed a significant barrier to their engagement in SRH programs due to the lack of an enabling environment. Therefore, it is essential to prioritize the creation of an enabling environment to promote adolescent engagement.

RECOMMENDATIONS

The recommendation of the study is presented in three key domains of the study. The first recommendation related to the engagement of the adolescent youths in the SRH program. The second recommendation related to inclusion and social diversity of the program beneficiaries in the study context. And, the third recommendation relates to social and institutional dimensions of the SRH program in the study area. Thurs;

1. The study findings shows that most of adolescents who doesn't engage in SRH program had no knowledge, negative attitude, and are more likely to practice risky SRH behaviors. Therefore, all organizations and partners that work on adolescent focused SRH programs/projects must put in much more effort in engaging adolescents in designing, implementing and monitoring and evaluation of such programs.
2. The study findings show that there is considerable difference in the program outcomes for male and female adolescents, and also participation in schooling, leadership of the program teams and activities in the study area. Thus, all organizations and partners that work on adolescent focused SRH programs/projects must practice an appropriate recruitment strategy should be implemented to assure all groups including females, early adolescents (primary school) to be included in engagement of SRH program, and target adequately in the components of the programs/projects.
3. The study findings show that early marriage and low power in decision-making roles by female adolescents, regarding their future, affected their participation in the regarding their future, affected their participation in the program and benefits from the outcomes. Thus, all organizations and partners that work on adolescent focused SRH programs/projects should give adequate attention gender inequality concerns of female adolescents.
4. The study findings show that creating an enabling environment, and collaboration among stakeholders and partners is important, yet is weak in the context of this program. Therefore, all organizations and partners that work on adolescent focused SRH programs/projects should work together to improve the engagement status of adolescents in order for them to meet their needs and for the program to achieve its intended outcomes.

The study focused on the case of one town and one district. Also, the study focused on the assessment of outcomes of the programs on beneficiaries (adolescents) in these specific locations. The study is thus limited by its objectives and the time limitations. Therefore, for broader generalizability, future studies should select adequate sample at country level at one hand and assess the cases of adequate number of SRH programs at country level.

Data availability

The fieldwork data is available upon request to the authors.

CONFLICT OF INTERESTS

The authors declare no conflict of interests.

ACKNOWLEDGMENTS

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Impact of productive safety net program on household food security in Southern Ethiopia: Propensity score matching results

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The study analyzed the impact of productive safety net program (PSNP) on household food security in drought-prone areas of Southern Ethiopia. A cross-sectional survey data were collected from 180 randomly sampled households. The study analyzed descriptive and logit econometric model data results. A propensity score matching (PSM) technique was used to estimate the inferential data results. The study findings show that the PSNP improved the food consumption status of beneficiary households as compared to that of the non-beneficiaries by improving food availability and stability of access and utilization of food. However, the impact varied with the PSNP intervention's the household accessed. Those who participated in household asset building programs besides transfer significantly improved their food security status and assured food consumption over the drought years. Also, these households' food stock and stability over time improved. The study concludes that the delays in resource transfers, lack of tailored support and limited coverage of households were the drawbacks to the effectiveness the program. Thus, timely transfer of safety net resources, targeting more households and locations are needed to scale up the program's impacts in the future. Also, broader country level study is required to document PSNP impacts.

Key words: Household food security, PSNP, PSM, droughts, Ethiopia.

INTRODUCTION

Meeting food requirements of the growing population is one of the major policy concerns and challenges in contemporary Ethiopia. Despite government efforts, and the flow aid from global actors on household food security, especially in drought affected areas, food insecurity is persistent problem (Birhanu, 2009; Tasew and Tariku, 2022). In resource scarcity, and growing impact of droughts and climate change, households spend 72 – 75% of their income on food, and the remaining portion of income is not enough to build assets or recover from shocks (UN, 2010, Pradhan and Rawlings, 2002; Tareke, 2022). Because of the recurrent

drought shocks, and inability to recover from, households in drought-prone areas live in vicious circle of poverty, and undoing the vicious cycle has been problematic for households (Haan et al., 2006; Zerhun, 2020). According to UN OCHA and World Bank situation reports, every year, not less than 7 million live in food aid in Ethiopia, and more than 10 million benefits from safety net related programs (UN, 2010; Pradhan and Rawlings, 2002; Tasew and Tariku, 2022) and such context is exacerbated by influx of refugees, internal displacements, conflicts and wars in Ethiopia (Abdi et al., 2023).

Starting in 2005, the Government of Ethiopia and a consortium of donors implemented a new form of safety net that is the PSNP. It reaches more than 7 million people and operates with an annual budget of nearly 500 million USD (Gilligan et al., 2008; Gashaw and Seid, 2019; Abdulhakim et al., 2022). According to Gilligan et al. (2008), the PSNP is complemented by a series of food security activities, collectively referred to as the Other Food Security Program (OFSP) (Abdi et al., 2023; Abraham, 2020; Ahmed and Burhan, 2018). Beneficiaries of the OFSP receive at least one of several productivity-enhancing cash transfers or services, including access to credit, agricultural extension services, technology transfer (such as advice on food crop production, cash cropping, livestock production, and soil and water conservation), and irrigation and water harvesting schemes. While the PSNP is designed to protect existing assets and ensure a minimum level of food consumption, the OFSP is designed to encourage households to increase income generated from agricultural activities and build assets. Drought-affected areas of Southern Ethiopia have been the beneficiaries PSNP from starting February 2005, yet studies on the evaluation of the impact of PSNP focused on Northern and Eastern Ethiopia (Kaleab et al., 2014; McLaughlin et al., 2023; Paulos and Melese, 2018). This study aims to fill both the empirical and policy practice gaps related to PSNP intervention impacts in Southern Ethiopia.

LITERATURE REVIEW AND ANALYSIS FRAMEWORK

Food security is conceptually understood at the global, regional, national, sub-national, community, group and household levels, and the concept is widely used since early 1970s (Gilligan et al., 2008, Tefera, 2009; Diriba et al., 2017; Feyisa, 2022). The study of food security focused on food supply-demand factors, and has been conceptualized as the achievement of 'national food self-sufficiency', and this conceptualized was rooted on the concept of food availability (Bonfiglioli, 2009; Hailu and Amare, 2022). However, the concepts of food access (including entitlements), utilization (nutrition) and food stability (sustainability) were included in the conceptualization equations (UN, 210; Rivera and Qamar, 2003; UN, 2010, Pradhan and Rawlings, 2002; Zerhun,

2020). Overtime, studies indicated that food availability without entitlements (Devereux, 2000; Del-Ninno et al., 2004), food access and utilization without nutrition (FAO, 2009; Tareke, 2022), and instability of the food in the continuum do not necessarily ensure food security at all levels (Khasnobis et al., 2007; Dagne, 2010; Haan et al., 2006; Tasew and Tariku, 2022). Also, food self-sufficiency at all levels was not possible due to contextual and institutional factors, and food security of households could be attained from production, exchange, and aid, that expand entitlements at diverse states of food demand and the leverage to ration food in the context of supply constraints (Tirame, 2008; Paulos and Melese, 2018). Thus, in terms of entitlement factors, studying food security at household level is argued to generate useful policy information on this critical unit of production and consumption, and a unit target for food aid, transfers and support for recovery from shocks such as droughts (Bonfiglioli, 2009; Hoddinott, 1999a, 1999b; Birhanu, 2009; Raisin, 2003; Feyisa, 2022). The government of Ethiopia, with its development partners, initiated the PSNP with aim of achieving poverty reduction through redistribution (transfer of resources), and mitigating shocks such as droughts and ensure recovery by asset building and create a fallback in the context of unforeseen consequences of shock dynamics of rural farm livelihoods (Besley et al., 2003; Gilligan et al., 2008; FAO, 2009; Shimelis, 2009; Hailu and Amare, 2022).

PSNP is also aimed to respond to chronic hunger through emergency appeals towards a more predictable response with predictable resources for a predictable problem (Andersson, 2009; Abdi et al., 2023), and providing smallholder farmers with greater flexibility over consumption decisions and stimulate the development of rural markets (Mendola, 2007; Abraham, 2020). Thus, the rationale of the PSNP was to bring smallholder farmers in shock and crisis contexts to recovery, and the gradual shift of the country's system dominated by emergency humanitarian aid to a productive and protective safety net system through multi-year resourcing framework (FAO, 2009; Tirame, 2008; Ahmed and Burhan, 2018) and through collective engagement and cooperation of development actors including donors (Haque and Andrew, 2004; Haan et al., 2006; Mendola, 2007; Gashaw and Seid, 2019).

The program addresses immediate human needs while simultaneously, according to Abdulhakim et al. (2022): (i) supporting the rural transformation process, (ii) preventing long term consequences of short-term consumption shortages, (iii) encouraging households to engage in production and investment, and (iv) promoting market development by increasing household purchasing power (Guo et al., 2004; Andersson et al., 2011; Girmay, 2020). By integrating with food security programs, PSNP targeted chronically food insecure households in Southern Ethiopia (Andersson, 2009; Sharp et al., 2006; Sarah et al., 2011; Gilligan et al., 2008; Devereux and
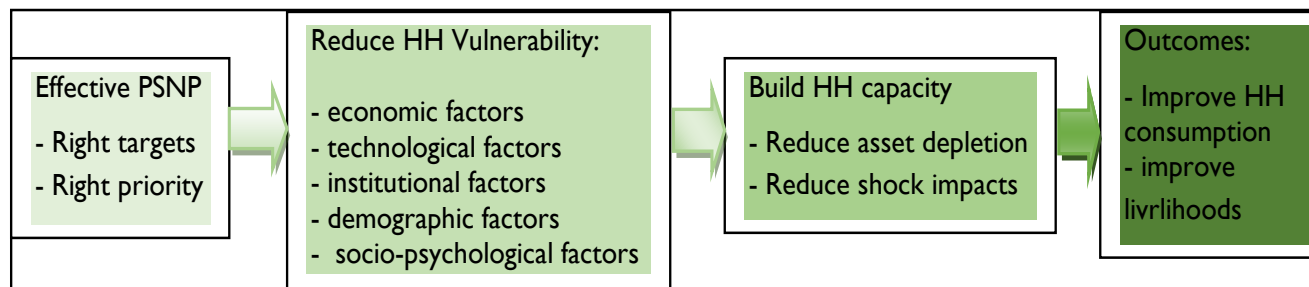
Figure 1. Conceptual framework of the study.
Source; Author's own sketch from review literature (2023).

Guenther, 2007; Shimelis, 2009; Andualem, 2020). As empirical studies show the PSNP saved assets and lives of millions of households in drought prone areas of Ethiopia though the expected outcomes of the intervention were not fully achieved (Tirame, 2008; Gilligan et al., 2008; Azadi et al., 2017; Bahru et al., 2021). From theoretical, policy and empirical literatures reviewed above, the analytical lens is framed (Figure 1).

The PSNP aims to provide „predictable transfers to meet predictable needs". Chronically food insecure households should receive support for six months each year for up to five years, bridging their annual food consumption gap, protecting their assets against „distress sales" and building their resilience against shocks. Transfers are delivered through two components. The Public Works Program" provides temporary employment to the majority of PSNP participants (84% in 2008), on rural infrastructure projects such as road construction. „Direct Support" delivers unconditional transfers to the minority of participants (16% in 2008) in households with no able-bodied members. Complementary programs such as "livelihood packages" should generate secondary streams of income, until the household is assessed as "food sufficient" and ready to "graduate" from dependence on transfers. In this respect, PSNP, according to Kaleab et al. (2014) and McLaughlin et al. (2023) serves multiple policy and social protection as well as environmental objectives (Andersson et al., 2011; Girmay, 2020; Gashaw and Seid, 2019; Abdulhakim et al., 2022).

Although emergency relief would continue to be required in years of severe shocks, if the PSNP is successful, then, millions of people would be removed from the annual emergency appeal process, and there would be a gradual shift towards a flexible multi-year safety net that expands and contracts according to need (Tirame, 2008; Paulos and Melese, 2018).

As indicated in the framework above, effective implementation of the PSNP was affected by economic, institutional, technological, socio-psychological, demographic and vulnerability factors, which will further impact the dynamics in household food availability, access, utilization and its stability over time while also improving food consumption.

MATERIALS AND METHODS: PSM ESTIMATION

The research approach, design and methods

The study employed quantitative approach, and an experimental research design. The quantitative data were analyzed using both descriptive statistical tools and econometric models. The descriptive statistics analyzed included mean, variance, standard deviations, percentages and chi-square test results. These data sets were used to assess the socio-economic situation of the respondents in regard to benefits from the PSNP, including targeting.

The inferential statistics analyzed in the study was estimated by PSM model. The motivation to use the PSM methods emanated from the dimensionality of the variables observed in this study. With a small number of characteristics (for example, two binary variables), matching is straight forward (one would group units in four cells). However, when there are many variables, it is difficult to determine along which dimensions to match units or which weighting scheme to adopt. Propensity score-matching methods, as we demonstrate, are especially useful under such circumstances because they provide a natural weighting scheme that yields unbiased estimates of the treatment impact (Shimelis, 2009; Raisin, 2003; Wooldridge, 2016). PSM could also give unbiased evidence and policy information, in the context of impact evaluation and will better inform policy decisions (Shimelis, 2009; Wooldridge, 2016).

Using PSM constructs a statistical comparison group by matching non-beneficiaries to beneficiaries using observable characteristics from before the program that are correlated with the probability of being in the program and with the outcome variables of interest. The method better estimates impact and predict the probability of each household receiving the PSNP on a sample of PSNP beneficiaries and non-beneficiaries. Each beneficiary household is then matched to one or more non-beneficiary households based on having a similar estimated probability of being in the program, or "propensity score." Using this sample of matched beneficiaries and non-beneficiaries the impact estimate is then constructed as the average difference in beneficiary outcomes and a weighted average non-beneficiary outcome, using the propensity scores to construct the weights (Gilligan et al., 2008; Wooldridge, 2016).

This PSM also extract from the sample of non-participating households a set of matching households that look like the participating households in all relevant pre-intervention characteristics. In other words, PSM matches each participant household with a non-participant household that has (almost) the same likelihood of participating into the PSNP (Rosenbaum and Rubin, 1983; Wooldridge, 2016). In this study, the PSM is estimated as follows.

The first step in PSM method is to estimate the propensity scores. Matching can be performed conditioning on P(X) alone

rather than on X, where P(X) = Prob (D=1|X) is the probability of participating in the program conditional on X. If outcomes without the intervention are independent of participation given X, then they are also independent of participation given P(X) (Shimelis, 2009; Wooldridge, 2016). In other words, PSM matches each participant household with a non-participant household that has (almost) the same likelihood of participating into the program. This reduces a multidimensional matching problem to a single dimensional problem. In the case of the study in hand, control groups (non-users) are those who pass the criteria to be chosen or eligible for the program.

A logit model was used to estimate propensity scores using a composite of pre-intervention characteristics of the sampled households (Rosenbaum and Robin, 1983; Wooldridge, 2016) and matching was then performed using propensity scores of each observation. In estimating the logit model, the dependent variable is participation in PSNP, which takes the value 1 if the household participated in the program and 0 otherwise. The mathematical formulation of logit model is as follows:

$$pi = \frac{e^{zi}}{1+e^{zi}}$$ .... (1)

Where, Pi is the probability of participation,

$$Zi = a_0 + \sum_{i=1}^{n} aiXi + Ui$$ .... (2)

Were,

i = 1, 2, 3, - --, n
a0 = intercept, ai = regression coefficients to be estimated, Ui = a disturbance term, and Xi = pre-intervention characteristics.

The probability that a household belongs to non-participant is:

$$1 - pi = \frac{1}{1+e^{zi}}$$ .... (3)

The logit model via the PSM generates better estimation results including in the case of predictor/explanatory variables, that is, the participation in the PSNP and the outcomes (Rosenbaum and Robin, 1983; Bryceson et al., 2002; Niguse, 2010; Wooldridge, 2016). Though several factors affect the selection of predictor variables, this study identified explanatory variables of the logit model and data from the program document and field observation. The study included as many explanatory variables as possible to minimize the problem of unobservable characteristics in evaluation of the impact of the program.

The matching estimators, region of common support condition and balancing tests

In this sub topic, the matching estimators, the region of common support condition and balancing tests were presented. Regarding matching estimators, all matching estimators analyze the outcome of a treated individual with outcomes of the comparison. In this respect, the PSM estimators differ: (1) in the way the neighborhood for each treated individual is defined and the common support problem is handled, and (2) in respect to the weights assigned to these neighbors (Chen and Krissey, 2008; Wooldridge, 2016). A major task of program evaluator after estimating the propensity scores is seeking the appropriate matching estimator. Out of the matching estimations available in existing theories, Nearest Neighbor (NN), the Caliper Matching, and the Kernel Matching, including the justifications, were selected as follows.

The nearest neighbour matching

The NN matching is the most straightforward matching estimator (Caliendo and Kopeing, 2008; Wooldridge, 2016). It considers a matching partner for a treated individual that is closest in terms of propensity score. In this matching, the participants and non-participants are randomly ordered in line with the closest propensity score (Guo et al., 2004; Dehejia and Wahba 2002). The result in increased quality of matches and decreased precision of estimates depend on NN matching without replacement, a comparison individual can be used only once. In cases where the treatment and comparison units are very different, finding a satisfactory match by matching without replacement can be very problematic (Dehejia and Wahba, 2002; Shimelis, 2009). Therefore, by matching without replacement, when there are few comparison units similar to the treated units, the match is conducted among the treated units to comparison units that are quite different in the estimated propensity score.

Caliper matching

The NN matching faces the risk of bad matches if the closest neighbor is far away (Caliendo and Kopeinig, 2008; Wooldridge, 2016). In this case, by imposing a tolerance level on the maximum propensity score distance (or calipers), the caliper matching is used as one form of imposing a common support condition. Applying caliper matching considers a matching partner for a treated individual that lies within the caliper ('propensity range') and is closest in terms of propensity score. However, it is difficult to know *a-priori* what choice for the tolerance level is reasonable (Suresh, 2009; Caliendo and Kopeinig, 2008). A benefit of caliper matching is that it uses only as many comparison units as are available within the calipers, allowing for the use of extra (fewer) units when good matches are (not) available (Dehejia and Wahba 2002;) and the smaller the size of the neighbourhood the better is the quality of the matches (Besley et al., 2003; Niguse, 2010).

Kernel matching

The Kernel matching considers all treated units matched with a weighted average of all controls with weights which are inversely proportional to the distance between the propensity scores of treated and controls (Besley et al., 2003; Wheeler-Sabates and Devereux, 2009; Wooldridge, 2016). Kernel weights the contribution of each comparison group member so that more importance is attached to those comparators providing a better match. In this matching, the use of the normal distribution (with a mean of zero) as a kernel weight is attached to a particular comparator, and is considered proportional to the frequency of the distribution for the difference in scores observed (Bryceson et al., 2002). The drawback of this method is that bad matches could be used as the estimator includes comparator observations for all treatment observation (Caliendo and Kopeinig, 2008; Wooldridge, 2016). Thus, a proper imposition of the common support condition is of major importance for kernel matching and a practical objection to its use is that it will not be obvious how to set the tolerance. According to Mendola (2007), a kernel with 0.25 band width is most commonly used.

Regarding the region of common support condition, according to Bryceson et al. (2002), imposing common support condition ensures that any combination of characteristics observed in the treatment group can also be observed among the control group. The common support is the region where the balancing score has positive density for both treatment/beneficiary and control/non-beneficiary units. No matches can be formed to estimate the TT parameter (or the bias) when there is no overlap between the

Table 1. Variable definition and measurement.

Definition of factors	Types and definition	Measurement	Hypothesis
Dependent variable (PSNP positively impact on participant, and no for none participant of PSNP)			
Participation in PSNP	Dummy, participation in the PSNP	1 if yes, 0 otherwise	**+/-**
Vulnerability factors (HH capacity/buffer shock impacts and recover)			
Sex of HHH	Dummy, sex of household head	1 if male, 0 otherwise	**+/-**
Family size of participant HH	Numerical, household size	Number, family members	**-**
Land size of participant HH	Numerical, landholding size	HH land size in hectares	**+**
Participant HH dependency ratio	Numerical, in-active vs. active labor	Ratio	**-**
Participant HH access to credit	Dummy, participation in credit	1 if yes, 0 otherwise	**+**
Participant HH access to farm extension	Dummy, extent of participation	1 if yes, 0 otherwise	**+**
Participant HH use of improved seed	Dummy, use of improved seed	1 if yes, 0 otherwise	**+**
Participant HH use of inorganic fertilizer	Dummy, use of fertilizer	1 if yes, 0 otherwise	**+/-**
Food consumption assuring outcome variable			
Household's food secure months	Numerical, i food secure months	Number of months	**+**
Household's secure child monthly meal	Numerical, in number of children meal	Number of months	**+**
Household's food transfer from relatives	Numerical, food from relatives	in category	**+**
Household's wage/job employment	Dummy, wage/job in pick farm seasons	1 if yes, 0 otherwise	**+**

Source: Researcher's hypotheses summary, 2023.

treatment and control groups. The author defines the region of common support by dropping observations below the maximum of the minimums and above the minimum of the maximums of the balancing score. The overlap condition for persons with the same x value in X are allowed to have a positive probability of being in treated and control group. The inferences were made based on sufficient data. Unlike ordinary regression, we don't extrapolate outside the range of the observed data points (Chen and Krissey, 2008).

Regarding the balancing test, the two-sample t-test can be used to check if there are significant differences in covariate means for both groups. Before matching, differences between the groups are expected; but after matching, the covariates should be balanced in both groups and hence no significant differences should be found. The t-test might be preferred if the evaluator is concerned with the statistical significance of the results (Caliendo and Kopeinig, 2008; Wooldridge, 2016). Finally, using predicted probabilities of participation in the program (that is, propensity score) match pairs will be constructed using alternative methods of matching estimators. Then the impact estimation is the difference between simple mean of outcome variable of interest for beneficiary and non-beneficiary households. In this case, the mean stands for household asset protection in birr and changes in food consumption six years. The mean impact of PSNP on asset prevention and food consumption assurance of household is given by;

$$\Delta C = \frac{1}{N_T} \sum_{i\varepsilon\{D=1\}} \left[y_1, i - \sum_j w(i,j) \, y_0, j \right] \quad \dots\dots\dots \quad (4)$$

Were,

ΔC is average mean of the treatment of treated, y is out come variables $0 < w(i,j) \le 1$ and $\{D = 1\}$ is the set of treated individuals, j is an element of the set of matched comparison units,

N_T is the number in the treated group, i is treated individual. Thus, different matching estimators are generated by varying the choice of $w(i,j)$. The independent variables were identified as a combination of vulnerability, economic, demographic, institutional, technology, and socio-psychological factors. The dependent variable is the participation of households in the PSNP. The outcome variables identified were improvements in household food consumption and prevention of asset depletion in the context of droughts and shocks in the study area. The variables were presented in Table 1.

DATA RESULTS

Descriptive data results and analysis

The data results are presented in two sections. The first section provides descriptive statistics and analysis, which were computed from responses of PSNP beneficiaries over the last six years, along with a comparison to non-beneficiary households. This descriptive statistics section primarily focuses on respondent characteristics. Descriptive statistical methods were employed to analyze program performance in accordance with the program implementation manual and to assess the achievements in community asset development. In this study, various descriptive statistics were utilized to analyze the household data. Table 2 presents the means and standard deviations of sample households' characteristics. This section of the analysis was conducted based on the pre-intervention characteristics of the households.

In this sub section, the first set of data results were

Table 2. Descriptive analysis of sample household pre-intervention characteristics.

Pre-interv. variable	Sample HH (N=180)		PSNP HH (N=120)		Non-PSNP HH (N = 60)		Difference in		T
	Mean	STD	Mean	STD	Mean	STD	Mean	SE	
SEXHH	0.94	0.22	0.95	0.21	0.93	0.25	0.016	0.036	-0.45
LITERHHH	1.68	0.69	1.6	0.61	1.85	0.81	0.25	0.10	2.29**
HHTARG	2.38	0.73	2.35	0.78	2.46	0.62	0.11	0.11	1.00
FAMSIZEHH	7.56	3.02	7.19	2.70	8.3	3.5	1.10	0.47	2.34**
HHACRED	0.5	0.50	0.52	0.50	0.45	0.50	-0.075	0.07	-0.94
HHIFETUSE	0.75	0.43	0.78	0.41	0.7	0.46	0.08	0.068	-1.22
HHISDUSE	0.5	0.51	0.49	0.50	0.51	0.53	0.025	0.08	0.30
HHLDSIZE	1.36	0.89	1.09	0.65	1.59	1.17	0.50	0.13	3.66***
HHAEXSERV	3.63	0.88	0.72	0.75	3.45	1.08	-0.27	0.13	-1.98**
DEPRHH	1.23	0.94	1.26	0.99	1.17	0.86	0.91	0.15	-0.61

*** and ** means significant at the 5 and 10% probability levels, respectively.
SEXHH = Age of household head, LITERHHH = Literacy of household head, FAMSIZEHH = Family size of the household, HHTARG = Household targeted by the PSNP, HHACRED = target household's access to credit, HHIFETUSE = Household's inorganic fertilizer use, HHISDUSE = Household's use improved seed, HHLDSIZE = Household's farm land size, HHAEXSERV = Household's access to extension service, DEPRHH = Dependency ratio in the household.
Source: Own survey data, 2023.

presented and analysed on the pre-intervention characteristics of sample households. As stated in the Table 2 the descriptive results show that there were presented and analysed on the pre-intervention characteristics of sample households. As stated in the Table 2 the descriptive results show that there were statistically significant differences between PSNP beneficiary and non-beneficiary households before intervention. The number of pre-intervention characters which show no statistically significant difference were; sex, age, family size, dependency ratio, use of fertilizer and improved seed. This indicates that most households were in the similar demographic and technology use status before program intervention in the study area. The main differences between the two groups of households were observed with respect to land size, Literacy level and extension service before the intervention. Compared to non-beneficiary households, beneficiary households have smaller size of land, law level of education and have got better access to the extension service.

The analysis shows that, beneficiary respondents were less educated than non-beneficiaries. As indicated in Table 2, the beneficiary households were more illiterate than non-beneficiary households. These implies that due to their education status, non-beneficiaries were in better food security level which made them to not be included in the program during targeting was carried out. Crop production requires primarily the availability of sustainable land. The total cultivated land of beneficiary and non-beneficiary households ranges from 0.13 to 4.5 ha. The land holding of beneficiary respondents ranges from 0.13 ha to 4.0ha and non-beneficiaries ranges from 0.25ha to 4.5 ha. Mean land holding of total respondents, beneficiaries and non-beneficiaries was 1.36ha, 1.09ha and 1.59ha respectively. It indicates that the average

land holding difference in between two groups is 0.5ha. This indicates that, the average land size of beneficiary respondents was smaller than non-beneficiary groups. Large land size favored crop production of non-beneficiaries before program intervention which made them better-off during targeting. The analysis also declared that beneficiary households were more accessible to extension service than non-beneficiaries. The continuous contact to extension workers made the beneficiary group to be known as food insecure households since these development agents were constant members and main actors of the beneficiary targeting in PSNP implementation.

The second set of data results presented and analysed in the sub section are the impact of PSNP on asset building (protection of household asset depletion from the droughts and related shocks) The PSNP intervention outcomes were classified in to two categories for the purpose of this study. Household asset prevention and assurance of household food consumption were major outcomes studied and also of the program. Household asset prevention was measured by using four major outcomes namely, livestock holding, farm income, expenditure in housing and expenditure on farm tools and equipment. Assurance of food consumption of household was measured using outcomes: decrease in food insecure months, change in number of children meal per day, wage employment in peak farming season by adult members of family and decrease in food transfer from relatives. The descriptive statistics analysis declared that as there is statistically significant difference in between beneficiary and non-beneficiary groups in three outcomes namely livestock holding, farm income and expenditure in housing. According to the result, there is difference in expenditure on farm tools and equipment with mean

Table 3. Current asset prevention and food consumption situation of sample households.

Outcome variable	Sample HH (N=180)		PSNP HH (N=120)		Non-PSNP HH (N = 60)		Difference in Mean		
	Mean	**STD**	**Mean**	**STD**	**Mean**	**STD**	**Diff**	**SE**	**T**
HHLOTLU	3.35	2.16	4.09	2.13	1.87	1.26	2.21	0.29	7.40***
HHEXPH	5206	9086	6375	10324	2868	5212	3507	1416	2.47**
HHEXPEQ	1847	2384	1870	2350	1800	2471	70	378	0.18
HHTFI	3647	5108	4539	5873	1863	2181	2675	784	3.40***
HHWE	0.30	0.46	0.29	0.45	0.33	0.47	0.04	0.07	0.56
HHFTR	1.39	0.65	1.22	0.41	1.73	0.88	0.50	0.09	5.25***
HHCHM	2.15	1.11	1.75	0.93	2.95	1.03	1.19	0.15	7.78***
HHFIM	0.68	0.46	0.75	0.43	0.55	0.50	0.2	0.7	2.76***

*** and ** means significant at the 1 and 5% probability levels, respectively.
HHLOTLU = Household livestock ownership in TLU, HHFT = Household's food transfer from relatives, HHEXPH = Household expenditure on housing, HHCHM = Household's child food secure months, HHEXPEQ = Household's expenditure on equipment, HHFIM = Household's food insecure months, HHTFI = Household's Total farm income, HHWE = Household's wage employment.
Source: Own survey data, 2011.

difference of 70birr but not statistically significant. It means that, beneficiary households expended more in farm tools and equipment even though it was not statistically significant.

The data in Table 3 presents descriptive statistics results of sample households based on their livestock holding, farm income, expenditure in housing and equipment. The survey results show that program and non-program households had mean livestock holding of 4.09 TLU and 1 and 7 TLU with mean difference of 2.21 TLU, respectively. This means that households in the program are better off in livestock holding than those of non-beneficiaries. Expenditure in housing was significantly different in between two groups. According to the result of descriptive analysis, the mean expenditure of beneficiary households was 6375.83 and 2868.35birr with mean difference of 3507.48birr respectively. This means, beneficiary households expended more money to improve their house and at the same time established their asset.

The mean farm income of program and non-program respondents was 4539.12 and 1863.3 birr with mean difference of 2675.82 birr respectively. This declares that farm income of the beneficiary households of the PSNP beneficiaries is more than non-beneficiary household. This implies that, the intervention of the program made difference in between two groups even though if requires further computation. In other hands the result of descriptive statistics indicated that there is difference in between two groups in terms of expenditure on farm tools and equipment. The computational result shows that beneficiary household expended more on buying farm tools and equipment even though it is not statistically significant. However, this descriptive result cannot tell us whether the observed difference is exclusively because of the program. Therefore, the program impact on asset prevention and food consumption outcomes was further

analysed by using PSM econometrics model to detect the result whether it is exclusively due to the program intervention or not.

The third set of data results presented and analysed on the sub section were the impact of PSNP on the improvement of household food consumption, measured in increased number of food secure months in the year. According to the program implementation manual of the PSNP, assuring food consumption of food insecure households was primary issue to be addressed by the intervention. For this study outcomes surveyed to measure food consumption assurance were change in food insecure months, change in number of children meal, change in food transfer from relatives and change in wage employment during peak farming season.

The descriptive analysis result indicated that, there is statistically significant difference in between PSNP beneficiary and non-beneficiary respondents. The computational result of change in months of food insecurity, change in children meal per day and food transfer from relatives declared significant difference but, the result of wage employment indicated no significance. Children meal per day is sensitive to food shortage, it will increase when availability of food increases and vice versa. The analysis result indicates that the children meal of beneficiary household consumes better number of meals per day and it is statistically significant. This means that there is increase in children meal per day in beneficiary households than non-beneficiaries. In other hands, change in months of food insecurity indicated the mean of 0.75 and 0.55 with mean difference of 0.20 respectively. To clarify it, change in food insecure months for non-beneficiary households was smaller than the beneficiary group. Most non beneficiary households responded no change that resulted in less value and most beneficiaries responded as there is change.

As depicted in Table 3, food transfers from relatives to

Table 4. Contingency coefficient among discrete explanatory variables.

Variable	VIF	R^2
AGEHHH	1.36	0.0019
LITERHHH	1.43	0.0288
HHLANDSIZE	1.07	0.0702
HHDEPR	1.00	0.0021

Source: Own estimation result.

Table 5. Contingency coefficient among discrete explanatory variables.

Variable	SEX	FAMSIZE	TARG	CRED	FERTUSE	SDUSE	EXSER
SEXHHH	1	0.208	0.106	0.097	0.031	0.142	0.216
HHFAMSIZE		1	0.386	0.279	0.218	0.352	0.492
HHTARG			1	0.110	0.329	0.279	0.225
HHACRED				1	0.340	0.391	0.144
HHIFERTUSE					1	0.335	0.154
HHISDUSE						1	0.112
HHAEXSER							1

Source: Own estimation result.

beneficiary households were smaller than those to the non-beneficiary group. This implies that non-beneficiary households receive more food transfers from their relatives to sustain themselves. The mean food transfer for beneficiaries was 1.22, while for non-beneficiaries, it was 1.73, resulting in a mean difference of 0.50 between the two groups. Regarding wage employment during the peak farming season, there was no statistically significant difference between the two groups, even though participation was lower in beneficiary households compared to the non-program group. The descriptive analysis alone cannot exclusively determine the impact of the program on food consumption assurance and asset prevention outcome variables. To discern the results attributed solely to the program intervention, further analysis was conducted using the PSM econometrics model. The results of the PSM technique analysis are presented following the descriptive analysis.

Inferential data results on the impact of the PSNP: The PSM estimation

The second part of this section presents the PSM results. The PSM estimate of the impacts of PSNP was conducted using two categorical variables: improvements in household food consumption and asset protection/ building. This section describes how the propensity scores matching was estimated provides the results of the common support region analysis, and discusses the balancing test. Additionally, explanations are provided

regarding the treatment effect of PSNP participant households.

In this subsection, data on propensity scores are presented. Propensity scores are obtained as the probability scores of individuals from the fitted simple logistic regression model. Logistic regression is typically applied when the dependent variable is dichotomous. The model was estimated using STATA 10 software, utilizing the propensity scores matching algorithm developed by Leuven and Sianesi (2003) and Wooldridge (2016).

In the estimation process data from the two groups, (PSNP participant households and non-participant households) were pooled such that the dependent variable takes a value 1 if the household was a PSNP participant and 0 otherwise.

Before running the regression model, the explanatory variables were checked for the existence of multi-collinearity and heteroscedasticity. The VIF, as presented in Table 4, indicates the contingency coefficient and collinearity coefficient values of the variables in the model shows that there is no problem of serious collinearity. To tackle heteroscedasticity problem in the data robust methods were used.

Table 5 presents the estimation results of the logit model, which demonstrates its effectiveness in estimating matching scores. The pseudo R-square value, at 0.09, indicates the extent to which the regressors explain the probability of participation. After matching, there should be no systematic differences in the distribution of covariates between both groups. Therefore, the pseudo
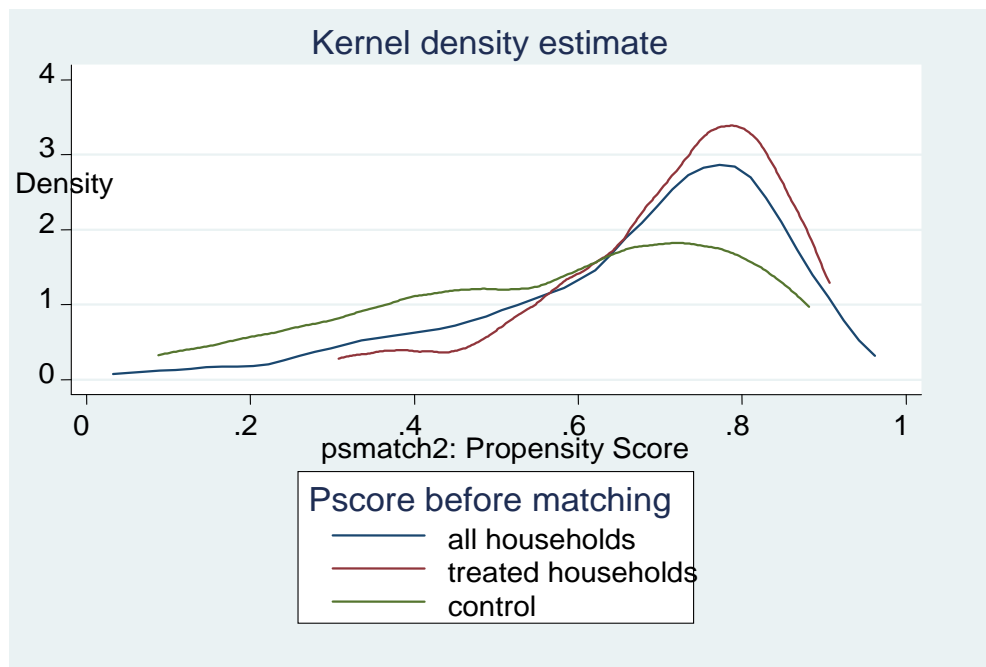
Figure 2. Kernel density of propensity scores.

Table 6. Results of the logistic regression model.

Variable	Coef.	Robust Std.Err.	Z
SEXHHH	1.140388	0.8256221	1.38
AGEHHH	0.0246988	0.0221227	-1.12
LITERHHH	-0.7234534	0.3222893	-2.24**
HHFAMSIZE	-0.0988882	0.0673103	-1.32
HHTARG	0.0271462	0.2434719	0.11
HHACRED	0.1734162	0.399316	0.43
HHLDSIZE	-0.4807804	0.2066548	-2.33**
HHIFERTUSE	0.4662242	0.5178497	0.90
HHISDUSE	-0.0672806	0.3923967	-0.17
HHAEXTSER	0.285944	0.2025059	1.41
DEPRHH	0.1204276	0.1661363	0.72
cons	1.574166	1.747851	0.90

Sample size= 180, R = 20.1, LR X^2 (11) = 27.12 Prob> X^2 = 0.0044, Log likelihood = -101.37823, ** and * means significant at the 5 and 10% probability levels, respectively.
Source: Own estimation.

R-square value should be relatively low, as suggested by Caliendo and Kopeinig (2008), Yibeltal (2008) and Wooldridge (2016). A low R-square value indicates that program households do not exhibit significantly distinct characteristics overall, making it easier to find a good match between program and non-program households, as noted by Pradhan and Rawlings (2002) and Wooldridge (2016). Figure 2 shows the kernel density of propensity scores.

As the estimated coefficients show that of the eleven explanatory variables, participation in PSNP was significantly influenced by three explanatory variables. As indicated in Table 6, the literacy level of household head, land holding and extension service. Among these three variables, literacy level and size of land holding affected the outcomes of the PSNP negatively. In other words, there is significant difference in between beneficiary and non-beneficiary households in land holding and literacy

Table 6. Distribution of sample households by estimated propensity scores and household type.

Group	Observations	Mean	Std Dev	Minimum	Maximum
Total households	180	0.6424764	0.17653985	0.087711	0.9066306
Treatment households	120	0.7150471	0.1365633	0.3074773	0.9066306
Control households	60	0.5699054	0.2145164	0.087711	0.8816158

Source: Own estimation result.

level thus affected participation in the program negatively. The negative term indicates that, households relatively with large land size were not included in the program and those having small land size were targeted in the program. Large land holding is found to influence amount of farm product positively and food security status of household which is directly related with the objective of PSNP. Households included in the program were more illiterate than non-beneficiaries according to the estimation of coefficient. The pre-intervention explanatory variables indicates that, households with better literacy level were found to be better off and not included in the program. On the other hand, extension service provided by extension institution affected positively and significantly related to the targeting of the beneficiaries. This means that, before targeting there was continuous visit of extension workers to poor households to rank their food security status in the community. All households are skewed to one direction. In case of treatment households, most of them are found in the middle of the distribution. On the other hand, most of the control households are partly found in the centre and partly in the left side of the distribution.

The second issues presented and analysed in the sub section were the data results on the matching of PSNP beneficiaries and non-beneficiary households. Before implementing the matching task, three main steps were followed and these are; predicted values of propensity scores should be estimated for all treated and control households, a common support condition should be imposed on the propensity score distributions of household with and without the PSNP intervention and observations whose predicted propensity scores fall outside the range of the common support region should be discarded.

In this study, as indicated in Table 7, the estimated propensity scores vary between 0.9066306 and 0.3074773 (mean = 0.71) for PSNP beneficiaries (treatment) households and between 0.8816158 and 0.087711 (mean = 0.56) for non-beneficiaries (control) households. The common support region would then lie between 0.3074773 and 0.8816158. This means, households whose estimated propensity scores are less than 0.3074773 or greater than 0.8816158 were not considered for the matching exercise. Therefore, one treatment household was discarded. This shows that the study does not have to drop many PSNP households from the sample in computing the impact estimator in

Table 8.

Table 9 declares that the estimated results of tests of matching quality were based on the selected best estimator. The best estimator which matches more, have list pseudo-R-square and with more statistically insignificant mean differences was selected. After looking into the results, it has been found that Kernel matching with a band width of 0.25 is the best estimator for the data we have. Based on the selected best estimator, beneficiary and non-beneficiary households were significantly different in terms of certain pre-intervention characteristics (literacy level of household head, land holding and extension service). However, these differences were removed after the matching was conducted.

The third issue presented and analysed in the section is data results on treatment effect on the treated in terms of assuring food consumption status of beneficiary and non-beneficiary households. In this section, the thesis provides evidence as to whether or not the PSNP has brought Significant changes on household food consumption assurance.

This part is further categorized in four outcome variables namely, decrease in months of food insecurity, change in number of children meal per day, wage/jobs in peak farming season and change in food transfer from relatives.

Decrease in months of food insecurity; the estimation result presented in Table 10 provides supportive evidence of statistically significant effect of the program on decreasing in months of food insecurity at household level. The result indicates that decrease in food insecure months mean difference is 0.29 which is significant at 1% level of probability. The larger mean indicates that the response to change in food insecure months is "Yes" and the minimum average indicates "No" with its value 0. It means that the intervention of PSNP decreased food insecure months of beneficiary households and it is part of consumption assurance.

Regarding food transfer from relatives, the estimation results presented in Table 10 indicate a statistically significant difference between beneficiary and non-beneficiary groups. This significance is observed at the 1% probability level, implying that food transfer from relatives to beneficiary households decreased significantly as a result of the program intervention. In other words, the impact of PSNP led to a reduction in food transfer

Table 7. Comparison of the three matching estimates by performance criteria.

Matching estimator	Performance criteria		
NN Matches	**Balancing test***	**Pseudo R^2**	**Matched sample size**
1st neighbors	10	0.034	165
2nd neighbors	10	0.044	146
3rd neighbors	9	0.037	165
4th neighbors	10	0.032	165
Caliper matches	**Balancing test***	**Pseudo R^2**	**Matched sample size**
0.01	10	0.049	146
0.25	11	0.026	165
0.5	10	0.048	65
KM Matches	**Balancing test***	**Pseudo R^2**	**Matched sample size**
With no band width	10	0.026	165
Band width of 0.1	10	0.024	165
Band width of 0.25	11	0.024	165
Band width of 0.5	10	0.048	165

*Number of explanatory variables with statistically no significant mean differences between the matched groups.
Source: Own estimation result.

Table 8. Results of the balancing tests of covariates using the kernel matching.

	Before matching (180)			After matching (179)		
Variable	**Treatment**	**Control**	**T-value**	**Treatment**	**Control**	**T-value**
	N = (120)	**N = (60)**		**N = (113)**	**N = (52)**	
SEXHHH	0.95	0.93333	0.46	0.9469	0.91362	0.98
AGEHHH	41.8	42.83	-0.59	41.86	42.31	-0.30
LITEHHH	1.6	1.85	-2.30**	1.6195	1.6244	-0.06
HHFAMSIZE	7.19	8.3	-2.34	7.32	7.37	-0.13
HHTARG	2.35	2.4667	-1.00	2.3805	2.4671	-0.92
HHACRED	0.525	0.45	0.95	0.50442	0.41785	1.30
HHLDSIZE	1.0978	1.599	-3.66***	1.1381	1.0512	0.93
HHIFERTUSE	0.78333	0.70	1.22	0.76991	0.69519	1.27
HHISDUSE	0.49167	0.51667	-0.31	0.49558	0.46203	0.50
HHAEXTSERV	3.725	3.45	1.98**	3.708	3.6157	0.82
HHDEPR	1.2641	1.1722	0.61	1.2333	1.2783	-0.39

***and** means significant at 1 and 5% probability levels.
Source: Own estimation result

from relatives to beneficiary households during food gap months.

Change in children meal per day; size and number of children meal is very sensitive to the food gap season. There is mean difference in between two groups in terms of this outcome variable. The difference strongly declares that there is increase in number of children meal per day in beneficiary households to three times and above per day than those of non-beneficiary groups. The value of survey response for above 3 and 3 per day was 1 and 2 respectively. The mean children meal response for beneficiary and non-beneficiary was 1.78 and 2.92 indicates the majority response of beneficiaries lies in between 3 and above 3 meals per day and the non-beneficiary's response lies under 3 meals. The result of the analysis indicated that there is statistically significant difference in between two groups at 1 percent probability level.

Table 9. Average treatment effect on the treated (ATT) for food consumption outcomes.

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
HHLOTLU	ATT	0.292035	0.358477	0.066442	0.083832	-0.79
HHEXPH	ATT	1.2389	1.7398	-.5009	0.138295	-3.62***
HHEXPEQ	ATT	0.7522123	0.4535271	0.29868524	0.085904	3.48***
HHTFI	ATT	1.787610	2.9265282	-1.13891758	0.181205	-6.29***

*** and ** means significant at 1 and 5% probability level.
Source; Own estimation result.

Table 10. Average treatment effect on the treated (ATT) for food consumption outcomes.

Variable	Sample	Treated	Controls	Difference	S.E.	T-stat
HHLOTLU	ATT	4.12	1.56	2.56	0.2782	9.22***
HHEXPH	ATT	6434.51	3439.16	2995.34	1289.63	2.32***
HHEXPEQ	ATT	1925.90	1283.60	642.29	445.24	1.44
HHTFI	ATT	4730.48	1484.48	3246.00	658.39	-4.93***

*** means significant at 1% probability level.
Source; Own estimation result

Wage employment in peak farming season; as shown in the statistical estimation result, this outcome variable (wage employment at peak farming season) was influenced by the program intervention. The mean difference between two groups was 0.06 which indicates beneficiary household participation in wage employment in peak farming season was decreased by the program impact but, it is not statistically significant. In other words, even though there was PSNP intervention employment in other wage employment schemes was not decreased significantly or the difference was not significant between two groups. In general, the effect of the PSNP intervention increased children meal per day, decreased food insecure months of the household and also decreased transfer of food from relatives which indicates the assurance of food consumption.

The fourth issue presented and analyzed in the section is on the treatment effect on the treated groups in terms of the PSNP outcomes on asset prevention from depletion in the shock contexts by households. The second objective of PSNP intervention was to prevent asset of food insecure households. The estimation result presented in Table 11 provides evidence of statistically significant effect of the program on household asset prevention measured in tropical livestock unit (TLU), expenditure in house improvement, total farm income and expenditure in farm tools and equipment. After controlling for pre-intervention differences in explanatory characteristics of the PSNP and non-PSNP households, it has been found that, on average, the program has increased livestock holding, farm income, and expenditure to improve housing at statistically significant level. There was also change in expenditure on farm

tools and equipment even though it is not statistically significant at the required level. As presented on Table 11 the outcome variables of asset prevention were; livestock holding, farm income, expenditure in housing and expenditure in farm tools and equipment.

The data sets in Table 11 shows that livestock holding of household; the mean livestock holding of beneficiary and non-beneficiary households was 4.12 and 1.56 respectively with mean difference of 2.56 TLU. There is statistically significant difference in livestock holding in between beneficiary and non-beneficiary categories. The result indicates that, on average the PSNP intervention increased livestock holding of beneficiary households by 2.56 TLU. It means that the impact of PSNP intervention increased total livestock in TLU of beneficiaries on average by 2.56 animals.

Total farm income; there is statistically significant difference in between treatment and control groups in terms of farm income as stated in Table 11. The analysis result declared that the average total farm income of beneficiary non beneficiary groups was 4730.48 and 1484.48 birr respectively with mean difference of 3246.00birr. According to the survey result, the better increase in farm income observed on PSNP beneficiary households than non-beneficiary groups. On average the PSNP intervention increased total income of beneficiary households by 3246 birr.

In terms of expenditure on housing, this outcome variable signifies the establishment of assets within households. According to the estimation results presented in Table 11, there is a statistically significant difference between participants and non-participants in the program. The analysis reveals that the average expenditure to

improve the housing of households in the beneficiary and non-beneficiary groups was 6431.51 and 3439.16 birr, respectively, resulting in a mean difference of 2995.34 birr. This matched mean difference of 2995.34 indicates that the effect of PSNP intervention increased expenditure on housing among beneficiary respondents.

Regarding expenditure on farm tools and equipment, the estimation results after matching indicate that the difference in expenditure is not statistically significant at the required probability level. However, despite the lack of statistical significance, the effect of PSNP intervention increased expenditure on farm tools and equipment on average by 642.29 birr. The estimation of household asset prevention outcomes reveals that the PSNP intervention both prevented and increased assets among beneficiary households.

DISCUSSION

First, from the matching results, the PSNP improved the smoothening of food consumption of households. This result is consistent with the findings documented on improvements of PSNP beneficiary households in livelihoods, social welfare and food (nutrition) in northern and central Ethiopia (Tareke, 2022; Tasew and Tariku, 2022; Zerhun, 2020). As expected, the participation in the PSNP was determined by a combination of factors. Treatment households were more likely to have smaller land size, more illiterate than control households and were in better contact with extension agents. Finding a reliable estimate of the PSNP impact thus necessitates controlling for all such factors adequately. In doing so, PSM has resulted in 119 treated households to be matched with 60 controlled households. In other words, a matched comparison of food consumption assurance outcomes was performed on these households who shared similar pre-intervention characteristics except the PSNP. The resulting matches passed a variety of matching quality tests and were fit to address the objectives of the study.

After controlling for other characteristics, it was been found that PSNP intervention had significantly increased children meal per day, decreased food insecure months and decreased food transfer from relatives. Even though the decrease in wage employment during peak farming season is not statistically significant, there is change due to the intervention.

More particularly, PSNP assured beneficiary households food consumption. The food consumption was not measured in calorie but the study was interested by the trend of food consumption. Therefore, the study result declares that the impact of PSNP decreased food insecure months increased children meal per day and decreased food transfer significantly whereas non beneficiary households receive more food transfer, have less children meal per day and face more food insecure

months in crop failure years. To evaluate the impact of PSNP exclusively, PSM technique was employed.

Second, from the matching, the PSNP had impact on prevention of household assets from depleting. This finding is also consistent with the findings of studies conducted in Eastern and northern Ethiopia (Kaleab et al., 2014; McLaughlin et al., 2023; Paulos and Melese, 2018). In this respect, the PSNP intervention had significantly increased live stock holding, farm income and also increased expenditure in house improvement. Even though the increase in expenditure on farm tools and equipment was not statistically significant, there is increase in expenditure due to PSNP intervention.

More particularly, PSNP intervention prevented household asset from depletion and increased asset of the program beneficiaries significantly. Therefore, the study result declares that the impact of PSNP increased asset prevention outcomes; livestock holding, increased farm income and increased expenditure to improve the house of beneficiary households significantly where as the result of non-beneficiary households indicates that, least farm income, small expenditure on house improvement and small number of livestock holding.

Third, there were constraints in the implementation of the PSNP program, and the achievements did not meet the expected outcomes. This finding aligns with empirical evidence documented on the challenges to the effective implementation of the PSNP program in evolving contexts, as reported by Andualem (2020), Azadi et al. (2017), Bahru et al. (2021), Diriba et al. (2017), Feyisa (2022), and Hailu and Amare (2022). Assessing community asset development required descriptive statistics. Qualitative data were collected from focus group discussion and secondary data from Southern Ethiopia Regional Agriculture Bureau. The response from sample households and focus group declares that the intended target of PSNP intervention succeeded by establishing different infrastructures in the target kebeles which were basic for rural transformation. According the secondary data, farmers training centres were built in all kebeles, primary schools, health posts, spring development and water shed management practices upgraded the community asset tremendously which was according to the program implementation manual and the objective of the project. In this respect, there were delays in resource transfers; problems in targeting households and the coverage were limited in time/geography.

In general, the studies on PSNP impact on household food security in Zambia, Ghana, Nepal and Ethiopia confirm that PSNP smoothens food consumption in shock seasons and prevent households from depleting their asset (Abdi et al., 2023; Abraham, 2020; Ahmed and Burhan, 2018; Azadi et al., 2017; McLaughlin et al., 2023). Whereas other studies shows that additional food security programs in the PSNP package impacted in communal and household assets, and improved land restoration, including infrastructure development

(Andersson et al., 2011; Girmay, 2020; Gashaw and Seid, 2019; Abdulhakim et al., 2022). In sum, ninety seven percent Households participated in HABP were on the track towards food security and towards graduating from aid dependence. However, the program implementation has got insignificant deviation from the project implementation manual (PIM). Thus, precisely targeting of beneficiaries and integrating the program with other food security programs and resource transfer requires need further improvement.

Conclusions

In this study cross sectional data from Southern Ethiopia were used to evaluate the impacts of PSNP on household asset prevention, food consumption assurance, community asset development and to identify constraints in implementing the program. The main question that this research attempted to answer was "what would the food consumption, asset prevention and protection status of households if they were not engaged in PSNP?" Answering this question requires observing outcomes with-and-without participation in PSNP for the same household. However, it is impossible to observe the same object in two states simultaneously. To assess the impact of program intervention, it requires base line data to take pre intervention as control and intervention as treatment group with in the same household but there was no intended data.

This study used descriptive statistics to analyze the community asset development and to identify the constraints in program implementation. The PSM technique was used to evaluate the PSNP impact in asset prevention and food consumption of households to eliminate the possible sample selection bias since the data were from a survey study. To overcome this beneficiary and non-beneficiary selected as a sample respondent from survey kebele's assuming they were under the same situation before the program intervention.

The primary data for this study was collected from 180 beneficiary and non-beneficiary households in the same kebele's and a structured questionnaire was administered to the study. The availability of baseline data were examined, and found that baseline data were not available. The study emphasized; selection bias is to be expected in comparing a sample from the population of PSNP beneficiaries with a sample of non-beneficiaries. To pin out the outcome exclusively due to program intervention, simply comparing by using descriptive statistics can make bias. Every micro econometric evaluation study has to overcome the fundamental evaluation problem and address the possible occurrence of selection bias. The first problem arises because we would like to know the difference between the participants' outcome with and without treatment. Clearly, we cannot observe both outcomes for the same individual

at the same time. Taking the mean outcome of non-participants as an approximation is not advisable, since participants and non-participants usually differ even in the absence of treatment (Caliendo and Kopeinig, 2008; Wooldridge, 2016).

In both cases, issues such as self-selection and endogeneity of program placement would create serious problems when using these kinds of impact evaluation exercise. Hence, the study has applied a PSM technique, which is capable of extracting comparable pair of treatment-comparison households in a non-random program setup and absence of baseline data (Dehejia and Wahba, 2002; Wooldridge, 2016; Addisalem et al., 2023).

RECOMMENDATIONS AND FUTURE AREAS OF RESEARCH

PSNP is important development efforts to ensure food security at household level if implemented properly. Based on the empirical findings reported in this thesis, the following policy recommendations are forwarded. The recommendations are that:

1) The study finding indicates that those beneficiary households participated in HABP were better used the PSNP intervention to increase their assets and assure their food consumption even the participation in program years was not more than 58%. The annual inclusion of PSNP beneficiaries in HABP should increase to fasten graduation of beneficiaries from PSNP and food security programs. Thus, Regional executive bodies (government, non-state actors and donors) should maximize livelihood options by maximizing intervention packages.
2) Most beneficiary households cannot read and write which has negative relation with technology adoption and graduation from both PSNP and FSP. Thus, adult education should be part of the PSNP package to tackle and enhance the potential of households to adopt technologies, secure information and enhance farm productivity.
3) The land holdings of most beneficiary households are small which cannot afford large family size even though the productivity of land per unit area has increased because of the PSNP intervention. It is better to look for open cultivable land including the potential for resettlement. Thus, cash crops that can be produced twice or three times a year should be introduced, specifically focusing on households with less than 0.5ha holdings. Such intervention should be supported by technology and extension services, and includes family members that are excluded from the PSNP targeting.
4) Further research at broader regional and country level is required to generalize the impact of PSNP on household food security (consumption) and asset building (prevention of household assets from depletion).

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CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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International NGO Journal

Review

The elephant in the room: Understanding recruitment pitfalls in NGOs

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This commentary can be considered as an appeal to the leaders of humanitarian aid and developmental organizations (commonly referred to as Non-Governmental Organizations or NGOs) to critically reflect on the existing recruitment process and take corrective measures to address a number of grave concerns. The paper argues that the recruitment process is now often power-centric, which not only provides limited space for transparency and accountability but also compromises candidates' respect in any given recruitment process. This power-centric approach may not necessarily enable the organization to select individuals with a genuine passion or to retain passionate employees even after they are hired. The paper encourages leaders and Human Resource professionals to engage in conversations by critically reflecting on a series of uncomfortable issues that are presented here, followed by the formalization of a code of conduct that establishes how organizations will treat candidates.

Key words: Non-Governmental Organizations (NGOs), recruitment, human resource (HR).

INTRODUCTION

A full-cycle recruitment process involves multiple steps, including preparation, sourcing, screening, selection and hiring. Throughout this process, recruiters and applicants interact in various ways, reflecting the organization's culture to its leaders and allowing applicants to gain insights into the organizational culture as they progress. The recruitment process in the humanitarian aid and development sector has evolved significantly over the past three decades due to various factors, including sector growth, a surge in the number of applicants, financial constraints limiting the Human Resource Department's structure, increased demand for transparency and accountability, the adoption of technology, and the use of recruiting agents. While organizations strive to hire the best candidates, they often balance these factors with narrowly defined transparency and accountability principles and a power-centric approach, which can have a negative impact on organizational culture and staff retention.

Based on nearly three decades of professional experience in this sector, the author would like to argue that the concept of transparency and accountability in the recruitment process has evolved into an internal organizational system primarily focused on a fair process

through extensive documentation. The current emphasis is on shortlisting applicants using exclusionary parameters, conducting multiple rounds of structured interviews with discrete questions, involving all powerful stakeholders, and relying on aggregated scoring and thorough documentation. However, transparency and accountability in the recruitment process should encompass three key aspects: (a) Establishing an internal organizational system for a fair process, (b) Disclosing all exclusion principles to all applicants, and (c) Providing constructive feedback to shortlisted candidates who progress through various interview stages. The Overseas Development Institute in the UK published a working paper in June 2006, in which the authors highlighted major concerns related to staff turnover in humanitarian agencies, which subsequently diminish the organizations' effectiveness in program delivery (Loquercio et al., 2006). In recent years, several authors have underscored that employee turnover in these organizations is an ongoing issue (Dubey et al., 2015; Korff et al., 2015). While some attribute excessive staff turnover to external factors, such as donors' emphasis on low overhead and the promotion of short-term contracts through brief funding cycles, others point to work-related issues and personal characteristics, including a lack of staff development opportunities. Additionally, the author contends that organizational culture, intertwined with power dynamics, is also a crucial factor influencing staff retention.

The power-centric approach of recruiters is evident not only in the narrowly defined transparency and accountability framework but also in other aspects, such as the involvement of powerful actors in the interview process and the style of communication with applicants. Job applicants experience this culture during the recruitment process, and their initial experience significantly shapes their perception of the organization's culture and power structure. This, in turn, has a critical impact on their mindset regarding short- or long-term commitments to the organization. Therefore, a power-centric approach may not necessarily facilitate the selection of passionate individuals or the retention of passionate employees even after they are hired.

ACKNOWLEDGING UNCOMFORTABLE ISSUES AND QUESTIONS

There is no 'magic bullet' that will address all the abovementioned concerns in the recruitment process. However, leaders of humanitarian aid and development organizations should acknowledge that they have a responsibility for the current situation and could do much more to improve it. Conversations would be encouraged among leaders and human resource professionals by critically reflecting on a series of uncomfortable issues and questions, which have been outlined based on experiential learning.

Exclusion principles

Designing the recruitment process based on exclusion principles is very damaging for the organizational culture. The common exclusion parameters include but are not limited to age, gender, religious identity, nationality, etc. The use of exclusion parameters based on the pregnancy of female candidates is not uncommon, as recruiters do not want to accommodate the cost of maternity leave. The use of exclusion principles not only compromises the ethical and moral standing of the existing staff members in the organization but also facilitates a recruitment process that has the potential to fast-forwards the exclusion of passionate persons and/or persons from disadvantaged groups in an unfair way.

Job profile

It is not uncommon to encounter job profiles that are loaded with various jargon and lists of competencies, often in an attempt to recruit exceptional individuals. Job profiles play a significant role in the exclusion process, as applicants are frequently shortlisted based on the presence of matching jargon in their resumes and the job profile. While the extensive use of jargon in job profiles can reflect the organization's knowledge level and ideological stance, it may not always be effective in identifying the right candidate who needs to possess skills beyond jargon to succeed in the role. What is particularly of concern is when job profiles include an exhaustive list of tasks and also state that job holders must be ready to perform any other tasks delegated by line management.

Use of technology

In today's recruitment landscape, the extensive use of technology as an intermediary between organizations and candidates is a common practice. Automation spans from the submission of applications to automated regret letters for candidates. Technology is also frequently employed to sift through a large pool of applicants. Many organizations have taken it a step further by incorporating automated, time-bound video interviews as the initial step in the interview process.

The use of psychometric tests is also prevalent, especially for leadership positions, although in-depth discussions with candidates based on test outcomes are seldom held. While the use of technology is essential, it is crucial to determine where the line should be drawn to infuse a human touch into the applicant experience during the recruitment process. A healthy organizational culture within the recruitment process strives to provide that human touch sooner rather than later.

Internal candidates

Two key staff retention strategies involve ensuring career

progression and offering preferential treatment to internal candidates. However, there are situations when recruiters ask internal candidates to undergo the interview process as a means of balancing power relations, even when they have already decided not to hire them. In such cases, internal candidates who are not selected may feel betrayed and may develop hostile relationships with their colleagues. Conversely, there are situations in which recruiters plan to hire internal candidates but still go through a formal recruitment process for compliance or other reasons. Recruitment is a time-consuming process for both recruiters and applicants, and it is unfair to ask external candidates to participate without informing them that there are internal candidates who may receive preferential treatment. The lack of transparency in addressing both internal and external candidates significantly undermines organizational culture and can lead to reputational damage in various ways.

Written tests

While it is understandable that written tests are required for many crucial positions within organizations, the study concern lies with their use as an exclusionary process when recruiting for leadership positions. Many candidates view this practice as disrespectful. Is it a sound practice for recruiters to administer written tests for senior leadership positions, especially when candidates have a proven track record of holding similar positions in comparable organizations for many years? The organization's culture is also reflected in how they allocate limited time for the written test, which may make it impossible for candidates to complete the test within the given timeframe.

Interview panel

Is the organization forming panels and determining the number of interviews rounds to ensure the participation of every influential person and relevant stakeholders within the organization's interview process? Does the organization set rigid interview schedules with short notice to accommodate the busy schedules of its influential members? Unfortunately, there have been instances where individuals received less than a day's notice from highly reputable organizations to appear for a test. Therefore, the questions mentioned above can serve as a self-reflection for any organization.

Style of interview

In many organizations, it is common practice to assemble panels comprising numerous influential members, each of whom takes turns in asking a series of structured questions to candidates. This approach often prioritizes a rigid question-and-answer format over engaging in

meaningful conversations with candidates to understand their passion and relevant knowledge and experience. The structured question-answer system frequently results in frequent interruptions to remind candidates to provide concise responses while also expecting them to elaborate on answers with relevant examples. The prepared structured questions are often biased towards internal candidates who are more familiar with organizational jargon, ideology, systems and so on. Additionally, when it comes to hypothetical questions, panel members often anticipate right or wrong answers from candidates, rather than fostering open discussions. Regrettably, panel members often neglect to create thorough notes at the end of interviews, which hinders the organization's ability to send personalized feedback to candidates when they are not selected for the position. The recruitment process should be considered a platform for both recruiters and applicants to engage in respectful conversations and get to know each other. However, there is often a lack of institutional mechanisms to ensure that panel members are adequately trained to conduct interviews with due respect for the candidates.

Other unwanted practices

Many organizations ask the last employer during a reference check about the number of sick leave days that the candidate took in the last number of years. The offer of a discriminatory pay package considering the identity of the selected candidate is also not uncommon. Many organizations do not revert to the candidates with any form of communication once the interview process is over and the people are not hired. There are many other undesirable practices that dominate the recruitment process.

CONCLUSION

It is imperative for leaders in the humanitarian aid and development sector to critically reflect on the existing recruitment process and take corrective measures to address existing concerns. Conscious or unconscious use of any exclusion principle simply does not correspond well with the ethical standard of humanitarian aid and development organizations. Every candidate deserves to be respected throughout the recruitment process, but sadly, many organizations still do not treat candidates as well as they should. Feedback loops and honest dialogue are often missing within organizations, but practically, they should be the essential aspects of a culture of transparency and accountability in the recruitment process. The author would like to argue that it is time for leaders in the humanitarian aid and development sector to formalize a code of conduct that establishes how organizations will treat candidates. Clarke (2017) has given very clear guidance to that effect, and some of his suggestions include the following:

1. We will honor your time.
2. We will treat you with respect.
3. We will always be forthright and transparent.

A clear statement of values also shows what matters to organizations beyond just talent acquisition, which is a huge part of recruiters' value proposition. Both candidates and the existing workforce will appreciate it resulting in improving the culture of the organizations and maintaining the motivation levels among the entire workforces. A recruitment process that rewards transparency and accountability create a virtuous cycle that supports and replenishes organizational culture.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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