

The Sustainability of Health-Based Projects: An Integrative Literature Review

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Abstract

Sustainability of health-based projects (HBPs) is a persistent challenge in both developing and developed health systems, particularly where donor dependence and resource constraints limit long-term continuity. This study presents a structured literature review aimed at identifying and synthesizing key factors influencing the sustainability of HBPs. The review draws on theoretical and empirical literature from sustainability science, health systems research, and project management to develop an integrated understanding of sustainability determinants. Findings reveal that sustainability is multidimensional and shaped by interrelated social, financial, organizational, and institutional factors. Community involvement strengthens ownership, participation, and local capacity, thereby enhancing project continuity. Service charges contribute to financial sustainability but may raise equity concerns in access to care. Customer care improves trust, satisfaction, and utilization of services, while diversified financial resources enhance resilience and reduce dependence on external funding. The study concludes that sustainability of HBPs requires an integrated and context-sensitive approach that balances financial viability, social inclusion, and institutional embedding. The review contributes to theory by consolidating fragmented literature and proposing a conceptual framework for understanding sustainability of NGO-led health interventions, particularly in developing country contexts.

Keywords: health-based projects, sustainability, community participation, financial resources, service charges, customer care, developing countries

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Introduction

Non-governmental organizations (NGOs) have emerged as key actors in social and economic development globally, particularly in low- and middle-income countries such as Nepal, where government resources, institutional capacity, and health system infrastructure are often limited.

NGOs are generally defined as non-profit, private organizations operating independently of direct government control, engaging in service delivery, advocacy, and community development initiatives (Ahmed, 2010). Their operational flexibility, grassroots orientation, and ability to mobilize financial and human resources make them particularly effective in addressing complex development challenges, including health, education, poverty reduction, and environmental sustainability.

In Nepal, the growth of the NGO sector has been significant, especially since the expansion of democratic governance and increased international development assistance. The sector has been supported by foreign governments, multilateral agencies, and international NGOs, which have contributed substantially to national development priorities, particularly in health, education, infrastructure, and local governance (Karkee, 2016). The increasing number of registered NGOs reflects their expanding role in supplementing public service delivery and strengthening community-level development efforts (Shrestha, 2019).

Within the health sector, NGOs play a crucial role in strengthening health systems through service delivery, capacity building, infrastructure support, health promotion, and policy advocacy. They frequently collaborate with government institutions and development partners to improve access to healthcare services and introduce innovative service delivery models in resource-constrained environments. Such collaboration is particularly relevant in Nepal, where geographic barriers, limited infrastructure, and workforce shortages continue to challenge equitable access to healthcare services. Previous research also highlights that government–NGO collaboration

enhances efficiency, responsiveness, and reach of health interventions in underserved communities (Hecht & Tanzi, 1993).

The sustainability of health-based interventions has therefore become a central concern in development discourse. Sustainability refers to the continuation of project benefits, services, and institutional functions beyond the period of external financial, technical, or managerial support (Shediak-Rizkallah & Bone, 1998). In health programs, sustainability extends beyond service continuation to include the maintenance of health outcomes, institutional capacity, and community-level systems over time (LaPelle et al., 2006). In the Nepalese context, sustainability is particularly important due to the country's reliance on donor-supported health initiatives and the need to ensure long-term continuity of services in rural and marginalized communities.

Despite substantial investments in health development projects, sustainability remains a major challenge. Empirical evidence suggests that sustainability is influenced by multiple interconnected factors, including community participation, financial resources, governance structures, leadership, organizational capacity, and stakeholder engagement (Ochieng, 2016). Government involvement is especially critical, as it provides policy continuity, institutional legitimacy, and integration of successful interventions into the national health system (Editor, 2019). In Nepal, such integration is essential for ensuring that externally supported health programs transition into sustainable, locally owned systems.

Furthermore, sustainability challenges in developing countries are compounded by

resource constraints, inequities in access to health services, geographical barriers, and shifting donor priorities (Editor, 2019). In Nepal, additional contextual factors such as difficult terrain, rural dispersion, and limited infrastructure further complicate the delivery and continuity of health interventions. Studies conducted by Mishra and colleagues emphasize that sustainability in Nepalese development contexts is also closely linked with risk management, institutional resilience, environmental considerations, and organizational performance in both public and project-based systems (Mishra, 2018; Mishra & Acharya, 2018; Lama et al., 2019; Mishra & Aithal, 2022). Similarly, broader sustainability-oriented research highlights the importance of organizational commitment, safety systems, and environmental integration in ensuring long-term effectiveness of institutional interventions (Ghimire et al., 2022; Ghimire et al., 2023; Ghimire et al., 2025).

As Nepal increasingly transitions toward self-reliance in health financing and service delivery, understanding sustainability has become more urgent. Therefore, a comprehensive review of the literature is necessary to synthesize existing knowledge on the determinants, challenges, and enabling conditions of sustainability in health-based projects. Such synthesis is essential for identifying research gaps, improving program design, and supporting policymakers, NGOs, and development partners in strengthening long-term health system performance in Nepal and similar contexts.

Research Objective

This review paper aims to systematically identify, analyze, and synthesize the key factors

influencing the sustainability of Health Benefit Programs (HBPs). Drawing on theoretical and empirical evidence from sustainability science, health systems research, and project management literature, the review seeks to develop an integrated framework for understanding the determinants of long-term program sustainability.

Methodology

This study adopts a qualitative, structured literature review approach to examine the factors influencing the sustainability of health-based projects (HBPs). The paper is developed as part of a collaborative academic exercise conducted by Bachelor of Public Administration students under the guidance of faculty members at Madhesh University. The review process was organized through a reading club initiative coordinated by the Dean's Office, where student groups were assigned to review and synthesize relevant literature on sustainability in health-based projects.

Each student group conducted an extensive review of secondary sources, including peer-reviewed journal articles, books, institutional reports, and credible web-based publications related to sustainability, public health, and project management. The review process was iterative and participatory. Drafts were exchanged among groups for peer critique, allowing for constructive feedback, identification of gaps, and refinement of arguments. This inter-group review mechanism ensured academic rigor and improved analytical depth.

Presentations of the reviewed literature were conducted in a seminar setting, where findings were discussed with a broader academic audience. Faculty members closely supervised

the entire process, providing continuous guidance, critical feedback, and validation of content accuracy and relevance. Revisions were incorporated based on peer and faculty comments, ensuring consistency, coherence, and scholarly quality.

This collaborative and supervised approach enhanced critical thinking, comparative analysis, and synthesis skills among students while ensuring that the final review reflects a comprehensive and academically rigorous understanding of sustainability factors in HBPs.

Literature Review

Theoretical Review

Institutional Theory

Institutional Theory provides a valuable framework for understanding how organizations adopt and sustain practices in response to external social, political, economic, and cultural pressures. The theory suggests that organizational behavior is shaped not only by efficiency considerations but also by the need to achieve legitimacy within the broader institutional environment (DiMaggio & Powell, 1983; Scott, 2007). Institutional environments comprise regulatory structures, governmental policies, professional standards, cultural norms, and societal expectations that influence organizational decision-making and strategic actions (Meyer & Rowan, 1977; North, 1990).

A central concept of Institutional Theory is legitimacy, which refers to the perception that an organization's actions are appropriate, desirable, and consistent with prevailing social values and expectations (DiMaggio & Powell, 1983). Organizations often adopt practices not solely because they improve performance but because

such practices enhance credibility, stakeholder trust, and long-term survival. Consequently, institutional pressures frequently influence the adoption of organizational innovations, sustainability initiatives, and development interventions (Jennings & Zandbergen, 1995).

DiMaggio and Powell (1983) identify three primary mechanisms through which institutional pressures shape organizational behavior: coercive, normative, and mimetic isomorphism. Coercive pressures arise from formal regulations, laws, funding requirements, and governmental expectations. Normative pressures emerge from professional networks, industry standards, and shared values that guide organizational conduct. Mimetic pressures occur when organizations imitate the practices of successful or legitimate peers, particularly under conditions of uncertainty. Together, these mechanisms contribute to organizational convergence, whereby institutions within a particular field adopt similar structures and practices to secure legitimacy and acceptance.

Subsequent developments in Institutional Theory have extended the focus beyond organizational conformity to recognize the dynamic interaction between institutions and organizational actors (Scott, 2008). Earlier deterministic perspectives emphasized how institutional constraints shape behavior through taken-for-granted assumptions and established norms (Berger & Luckmann, 1966). More recent perspectives acknowledge that organizations may respond differently to similar institutional pressures depending on their resources, leadership, strategic priorities, and environmental contexts. Such variation helps explain why some organizations successfully institutionalize

sustainable practices while others struggle to maintain them over time.

The theory is particularly relevant for understanding the sustainability of development and health projects implemented by non-governmental organizations (NGOs). Health projects operate within complex institutional environments involving governments, donors, communities, healthcare providers, and regulatory bodies. Sustainability often depends on the extent to which project objectives, structures, and activities align with the expectations and priorities of these stakeholders. Coercive pressures may emerge through government regulations and donor requirements, normative pressures through professional health standards and development practices, and mimetic pressures through the adoption of successful models implemented by other organizations.

Institutional Theory also highlights the importance of stakeholder legitimacy in sustaining project outcomes beyond the funding period. Projects that are integrated into local governance systems, supported by community norms, and aligned with national health priorities are more likely to secure long-term acceptance and resource support. Conversely, interventions that remain heavily dependent on external funding or fail to achieve local ownership may face challenges in maintaining activities after donor withdrawal.

In the context of health project sustainability, Institutional Theory suggests that long-term success depends not only on financial and technical resources but

also on the ability of organizations to build legitimacy, foster stakeholder engagement, and adapt to institutional expectations. The theory therefore provides a useful lens for examining how regulatory frameworks, donor influences, professional standards, community participation, and organizational characteristics interact to influence the sustainability of health interventions.

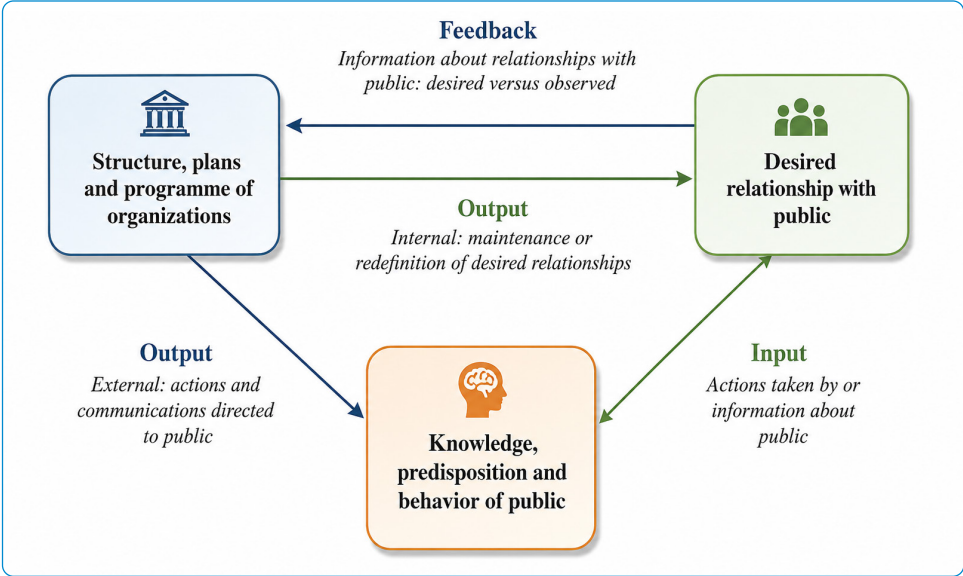
Open Systems Theory

Open Systems Theory views organizations as dynamic entities that continuously interact with their external environments through the exchange of information, resources, and feedback (Bastedo, 2004). Unlike closed systems, which operate with limited consideration of environmental influences, open systems adapt their structures, processes, and strategies in response to changing external conditions. This perspective emphasizes that organizational survival and effectiveness depend on maintaining alignment with environmental demands and stakeholder expectations.

The theory has informed several organizational perspectives, including contingency, institutional, and resource dependence theories, all of which recognize the importance of environmental interactions in shaping organizational outcomes (Scott, 2002). From an open systems perspective, organizations continuously acquire inputs from the environment, transform them through internal processes, and generate outputs that influence stakeholders and the broader environment. Feedback mechanisms then guide adaptation and learning.

Figure 1

Open System Model of Public Relations



Note. Cutlip et al. (2000)

In the context of health project sustainability, Open Systems Theory highlights the importance of interactions among NGOs, governments, donors, healthcare providers, beneficiaries, and local communities. Sustainable health projects depend on their ability to adapt to changing policy environments, funding conditions, community needs, and technological developments. The theory suggests that sustainability is strengthened when projects maintain effective communication channels, stakeholder engagement mechanisms, and adaptive management practices that enable continuous learning and responsiveness. Consequently, health interventions should be viewed not as isolated initiatives but as components of broader social, political, and institutional systems that influence their long-term viability.

Public Relations Theory

Public Relations (PR) Theory emphasizes the importance of managing relationships

between organizations and their stakeholders to enhance organizational effectiveness and legitimacy. According to Grunig (1992), public relations contributes to organizational success by aligning organizational objectives with the expectations and interests of key stakeholder groups. Effective stakeholder relationships foster trust, cooperation, and support, which are critical for achieving organizational goals and sustaining operations over time.

The theory is closely associated with the open systems perspective, which views organizations as dependent on continuous interaction with their external environments (Cutlip et al., 2000). From this perspective, public relations functions as a strategic mechanism through which organizations monitor environmental changes, engage stakeholders, and adapt their activities to emerging challenges and opportunities. Rather than merely disseminating information, public

relations facilitates two-way communication that enables organizations to respond to stakeholder concerns and build mutually beneficial relationships.

Within the context of health project sustainability, Public Relations Theory underscores the importance of stakeholder engagement, community participation, donor relations, and government collaboration. Health projects that maintain transparent communication and foster trust among beneficiaries, implementing agencies, and funding organizations are more likely to secure long-term support and legitimacy. Effective communication strategies can also enhance community ownership, strengthen partnerships, and facilitate resource mobilization, all of which contribute to project sustainability beyond the initial implementation phase.

Resource-Based View Theory

The Resource-Based View (RBV) Theory explains organizational performance and sustainability through the possession and effective utilization of strategic resources and capabilities (Barney, 1991). According to RBV, organizations achieve sustained success when they possess valuable, rare, inimitable, and non-substitutable resources that competitors or other organizations cannot easily replicate. These resources may include financial assets, human capital, technical expertise, organizational knowledge, managerial capabilities, and institutional relationships.

Barney (1991) argues that sustainable competitive advantage emerges when organizational resources create value and remain difficult to imitate or replace. The theory further assumes that organizations differ in the resources

they possess (resource heterogeneity) and that these resources are not easily transferable across organizations (resource immobility). As a result, organizations with stronger resource bases are often better positioned to achieve long-term success.

In relation to health project sustainability, RBV suggests that the continuation of project benefits depends on the availability and effective management of critical resources. Financial stability, skilled personnel, leadership capacity, organizational learning, infrastructure, and stakeholder networks can significantly influence whether project outcomes are maintained after external funding ends. NGOs and health institutions that invest in capacity building, knowledge management, and local resource mobilization are more likely to sustain project activities and outcomes over time. The theory therefore provides a useful framework for understanding how organizational capabilities contribute to the long-term viability of health interventions.

Contingency Theory

Contingency Theory proposes that there is no universally optimal approach to organizational management, structure, or decision-making. Instead, organizational effectiveness depends on the alignment between organizational practices and the specific circumstances in which an organization operates (Chapman, 1997; Moniz, 2010). The theory argues that strategies that are effective in one context may not necessarily produce similar outcomes in another because organizational environments differ in complexity, uncertainty, resources, and stakeholder expectations.

Rooted in systems thinking, Contingency Theory emphasizes that organizations must adapt to both internal and external environmental conditions. Organizational performance is therefore influenced by the degree of fit between organizational characteristics and contextual factors such as technology, leadership style, organizational culture, regulatory environments, and stakeholder demands. This perspective recognizes that management practices must remain flexible and responsive to changing circumstances.

For health project sustainability, Contingency Theory suggests that sustainability strategies should be tailored to the specific social, economic, political, and institutional contexts in which projects operate. Factors such as community needs, donor requirements, health system capacity, governance structures, and local cultural conditions may influence the effectiveness of sustainability initiatives. Consequently, interventions that succeed in one setting may require adaptation before being implemented elsewhere. The theory highlights the importance of context-specific planning and adaptive management in sustaining health outcomes over time.

Social Network Theory

Social Network Theory focuses on the role of relationships and interactions among individuals, groups, and organizations in facilitating information exchange, resource sharing, influence, and collective action (Liu et al., 2017). The theory posits that social structures and patterns of connectivity significantly influence organizational behavior, innovation diffusion, decision-making, and community resilience. Rather than viewing actors as isolated

units, Social Network Theory emphasizes the interconnected nature of social systems and the importance of network relationships in shaping outcomes.

The theory has been widely applied to explain the diffusion of innovations, knowledge transfer, behavioral change, and collaborative governance. Concepts such as the two-step flow of communication, weak ties, and network centrality highlight how information and influence move through social systems and affect organizational and community outcomes (Liu et al., 2017). Social Network Analysis (SNA) further provides methodological tools for examining patterns of connectivity and identifying key actors, relationships, and structural characteristics within networks.

In the context of health project sustainability, Social Network Theory highlights the importance of partnerships, collaboration, and stakeholder engagement. Sustainable health projects often depend on strong relationships among NGOs, government agencies, donors, healthcare providers, community leaders, and beneficiaries. Dense and well-connected networks facilitate resource mobilization, knowledge sharing, trust-building, and coordinated action, all of which support long-term project success. Furthermore, resilient stakeholder networks can help maintain project activities after external support has diminished, thereby enhancing the sustainability of health interventions. The theory therefore provides valuable insights into how social relationships and collaborative structures contribute to enduring health outcomes.

Concept of Sustainability

Sustainability has emerged as a multidimensional concept that is widely

applied across development, environmental management, organizational studies, public health, and project management. Despite its extensive use, the concept remains subject to diverse interpretations depending on disciplinary perspectives and practical contexts. A systematic review by Gruen (2008) identified several dominant interpretations of sustainability, including the continuation of programs, maintenance of health benefits, enhancement of community capacity, and institutionalization of interventions within organizational systems. The existence of these varying definitions highlights the complexity of the concept and the absence of a universally accepted understanding of sustainability (Persoon, 2016).

At its core, sustainability refers to the capacity of an intervention, organization, or system to maintain its functions, benefits, and outcomes over time. In organizational and project contexts, sustainability is often viewed as the ability to continue delivering intended benefits beyond the initial implementation period or after external support has ended. This perspective extends beyond project completion and emphasizes the long-term continuation of positive impacts. The sustainability of projects is commonly examined through three interrelated dimensions: organizational sustainability, financial sustainability, and community sustainability (Alonzi, 2018). Organizational sustainability concerns the continued functioning and institutional capacity of implementing organizations; financial sustainability focuses on the availability of adequate resources to support ongoing operations; and community sustainability reflects the ability of beneficiaries and local stakeholders to maintain project activities independently.

The broader sustainability literature has increasingly adopted the triple-bottom-line perspective, which integrates economic, environmental, and social considerations into decision-making processes (Elkington, 1997; Gimenez et al., 2012). This perspective recognizes that long-term development outcomes require balancing economic viability, environmental stewardship, and social well-being. Gladwin et al. (1995) further conceptualized sustainability as a developmental process that promotes economic security, social participation, and ecological integrity while ensuring that future generations retain access to essential resources. Similarly, sustainability frameworks emphasize the interconnectedness of environmental protection, social equity, economic prosperity, and governance systems in achieving enduring development outcomes.

Within organizational contexts, sustainability has evolved from a predominantly environmental concern to a broader strategic imperative encompassing organizational resilience, stakeholder value creation, and long-term performance. Economic sustainability is often associated with efficient resource utilization and financial viability, whereas environmental sustainability focuses on minimizing ecological impacts through waste reduction, energy efficiency, pollution control, and responsible resource management (Cruz & Wakolbinger, 2008; Gimenez et al., 2012). Social sustainability, in contrast, emphasizes human well-being, equity, diversity, community engagement, and responsible governance practices (Elkington & Rowlands, 1999). These dimensions collectively contribute to organizational legitimacy, stakeholder trust, and long-term success.

Sustainability Management

Sustainability management represents the integration of sustainability principles into organizational planning, decision-making, and operational processes. The concept is grounded in the principle that current developmental needs should be met without compromising the ability of future generations to meet their own needs (Chhabra, 2022). Sustainability management therefore seeks to balance economic objectives with social responsibility and environmental protection.

Contemporary sustainability management extends beyond regulatory compliance and corporate philanthropy to encompass strategic organizational transformation. Organizations increasingly incorporate sustainability considerations into governance structures, resource allocation, risk management, and performance measurement systems. This approach recognizes that long-term organizational success depends not only on financial performance but also on environmental stewardship, stakeholder engagement, and social value creation. Consequently, sustainability management has become a central framework for promoting resilience, responsible resource utilization, and sustainable development across public, private, and non-profit sectors.

Sustainability in Project Management

The integration of sustainability principles into project management has received growing scholarly attention as organizations seek to ensure that project outcomes generate enduring benefits for stakeholders. Sustainable project management extends traditional project success criteria beyond the completion of scope, time, and cost objectives to include long-term social,

environmental, and economic impacts (Armenia et al., 2019).

The literature suggests that sustainability should be embedded throughout the project life cycle, from planning and implementation to monitoring, evaluation, and post-project transition. Sustainable projects are designed not only to achieve immediate objectives but also to create lasting value while minimizing adverse environmental and social consequences. This perspective aligns with the growing recognition that project activities influence broader systems and communities beyond their immediate outputs.

Sustainable Project Management (SPM) has been defined as the planning, monitoring, and control of project processes while considering environmental, economic, and social dimensions throughout the project life cycle and ensuring transparent, ethical, and stakeholder-oriented decision-making. The approach emphasizes stakeholder participation, accountability, ethical conduct, social equity, environmental responsibility, and long-term economic prosperity. Such principles are increasingly regarded as essential for ensuring that project outcomes remain relevant, beneficial, and sustainable beyond the project funding period.

Sustainability in Health-Based Projects

The concept of sustainability is particularly significant in health-based projects because health interventions often depend on external funding, technical expertise, and institutional support. In the health sector, sustainability is commonly defined as the capacity to maintain program services and health benefits after major external financial, managerial, or technical assistance has

ceased. This definition highlights the importance of continuity and long-term service delivery beyond donor-supported implementation phases.

Scholars have emphasized that sustainability in health programs should be understood not merely as the continuation of activities but also as the maintenance of positive health outcomes over time (Schell et al., 2013). Furthermore, sustainability is increasingly viewed as a dynamic process rather than a fixed endpoint. Health interventions frequently evolve in response to changing community needs, institutional priorities, and resource availability, requiring continuous adaptation and learning (Fixsen et al., 2005; Scheirer & Dearing, 2011).

The literature identifies several determinants of sustainability in health projects, including organizational capacity, stakeholder commitment, community ownership, policy support, financial resources, leadership, and collaborative partnerships (Jackson et al., 1994). Community participation is particularly important because local ownership strengthens commitment to maintaining project activities after donor withdrawal. Similarly, institutionalization of successful interventions within existing health systems enhances the likelihood of long-term continuation.

Recent scholarship has also expanded the concept of sustainability in healthcare to include environmental and social considerations. Mortimer et al. (2018) argue that sustainability should be regarded as a dimension of healthcare quality that balances health outcomes with environmental stewardship, social well-being, and economic efficiency. This broader perspective reflects growing recognition that health systems must address present health needs

while safeguarding resources and opportunities for future generations.

Overall, the sustainability of health-based projects depends on the extent to which interventions become embedded within local institutions, supported by stakeholders, adequately resourced, and responsive to changing community needs. Consequently, sustainability should be viewed as a multidimensional and ongoing process that integrates organizational capacity, community engagement, resource mobilization, policy support, and continuous learning to ensure enduring health benefits.

Factors Influencing the Sustainability of Health-Based Projects

The sustainability of health-based projects (HBPs) has attracted considerable attention in public health and development literature due to the persistent challenge of maintaining project benefits beyond the period of external support. Sustainability is influenced by a complex interaction of organizational, financial, social, institutional, and environmental factors. Existing literature highlights several critical determinants that contribute to the long-term viability of health interventions, including community involvement, service charges, customer care, financial resources, partnerships and collaboration, and institutionalization. These factors collectively shape the capacity of health projects to maintain services, achieve intended outcomes, and adapt to changing contextual conditions.

Community Involvement and Sustainability of Health-Based Projects

Community involvement is widely recognized as a fundamental determinant of sustainable health interventions. Community

participation refers to the active engagement of beneficiaries and stakeholders in the planning, implementation, monitoring, and evaluation of development initiatives rather than their passive receipt of project benefits. Participatory approaches are based on the premise that sustainable improvements in health outcomes are more likely when communities develop ownership of interventions and contribute to decision-making processes.

Research suggests that community participation enhances sustainability through several mechanisms, including increased local ownership, improved program relevance, strengthened community capacity, and greater accountability (Kinne et al., 1989). Community engagement facilitates the development of local leadership, knowledge, and problem-solving skills, enabling communities to continue project activities after external support has ended. Similarly, Zakus and Lysack (1998) emphasize that community participation empowers individuals and groups to identify health needs, develop solutions, mobilize resources, and evaluate outcomes, thereby strengthening local health systems.

Evidence from systematic reviews demonstrates that community participation contributes to positive outcomes at individual, organizational, and community levels across diverse health domains (Haldane et al., 2019). However, the effectiveness of participatory approaches is influenced by contextual factors such as trust, social cohesion, governance structures, and stakeholder relationships. Studies conducted in Nepal have also highlighted both the opportunities and challenges associated with community participation. While community-based initiatives such as women's health groups and community-managed health services

have demonstrated positive outcomes, limited awareness, weak governance structures, and insufficient stakeholder engagement have been associated with lower service utilization and reduced project effectiveness (Morrison et al., 2005; Sepehri & Pettigrew, 1996).

Overall, the literature consistently indicates that meaningful community involvement promotes project ownership, strengthens local capacity, and enhances the likelihood of sustaining health interventions beyond donor support.

Service Charges and Sustainability of Health-Based Projects

Financial sustainability remains a critical concern for health-based projects, particularly in resource-constrained settings. Service charges or user fees have been widely discussed as a mechanism for generating revenue to support operational costs, infrastructure maintenance, and service delivery. From a sustainability perspective, service charges can contribute to financial viability by reducing dependence on external funding sources and supporting the continuity of healthcare services.

Several scholars argue that appropriately structured user fees can improve accountability and service quality by creating incentives for healthcare providers to meet patient expectations (Amalberti et al., 2016). Service charges may also facilitate cross-subsidization, whereby individuals with greater financial capacity contribute to the costs of services for disadvantaged populations. Such arrangements can support both financial sustainability and equitable service provision.

Nevertheless, the literature also highlights significant concerns regarding the impact of user fees on healthcare access. Studies consistently demonstrate that high service

charges disproportionately affect low-income populations, potentially creating barriers to essential health services and increasing health inequities (McIntyre et al., 2006). Excessive fees may discourage healthcare utilization, resulting in unmet health needs and poorer health outcomes. Evidence from health projects in developing countries suggests that service charges must be carefully balanced to ensure financial sustainability without compromising accessibility and equity.

Consequently, the effectiveness of service charges as a sustainability strategy depends on local socioeconomic conditions, affordability considerations, and the availability of complementary financing mechanisms.

Customer Care and Sustainability of Health-Based Projects

Customer care has emerged as an important component of sustainable healthcare delivery. Patient-centered approaches emphasize responsiveness to patient needs, expectations, and experiences as critical determinants of healthcare utilization and organizational reputation. Healthcare service quality has traditionally been conceptualized as the gap between patient expectations and perceived service performance (Parasuraman et al., 1985).

Contemporary literature identifies multiple dimensions of healthcare service quality, including functional quality, technical quality, emotional value, trust, and social influence (Nguyen et al., 2021). Positive patient experiences enhance satisfaction, strengthen trust in healthcare providers, and encourage continued utilization of services. In turn, sustained utilization contributes to the long-term viability of health programs.

Customer care systems also provide mechanisms for collecting feedback, addressing complaints, and identifying service gaps. Effective communication and responsiveness can strengthen relationships between healthcare organizations and communities, thereby fostering public trust and social support (Mehta & Xavier, 2009). Furthermore, quality improvement initiatives that integrate patient feedback have been associated with improved organizational performance and sustainability (Mortimer et al., 2018).

The literature suggests that healthcare organizations that prioritize service excellence, patient satisfaction, and stakeholder engagement are better positioned to maintain community support and sustain project outcomes over time.

Financial Resources and Sustainability of Health-Based Projects

Financial sustainability is consistently identified as one of the most important determinants of project sustainability. Financial resources enable organizations to maintain operations, invest in infrastructure, retain qualified personnel, and respond to emerging challenges. The sustainability literature emphasizes that long-term project success depends not only on the availability of funding but also on effective financial management and diversification of revenue sources.

Health projects frequently rely on donor funding, government support, private contributions, and internally generated income. While donor funding can facilitate project implementation and expansion, dependence on external sources may create vulnerabilities when funding cycles end or donor priorities change (Micah et al., 2018). Consequently,

scholars advocate diversified funding strategies that combine external support with internally generated revenues to enhance organizational resilience (Kingma, 2003).

Research on non-governmental organizations highlights the importance of strategic financial management, income diversification, and resource mobilization in sustaining organizational operations. Internal revenue-generating activities, membership contributions, service provision, and social enterprise initiatives have been identified as mechanisms for reducing financial dependence and improving long-term sustainability. However, excessive commercialization may also create mission drift and ethical concerns, requiring careful alignment between financial strategies and organizational objectives.

Overall, the evidence indicates that sustainable health projects require diversified funding sources, strong financial governance, and adaptive resource management strategies.

Partnerships and Collaboration in Sustainability of Health-Based Projects

Partnerships and collaborative relationships play a significant role in enhancing the sustainability of health-based projects. Health challenges are multidimensional and often require coordinated action among governments, non-governmental organizations, healthcare providers, communities, academic institutions, and development partners.

Collaborative partnerships facilitate resource sharing, knowledge exchange, capacity building, and coordinated service delivery (Nyström et al., 2018). Effective partnerships are characterized by trust, mutual accountability, shared objectives, and transparent communication. Studies have demonstrated

that collaboration between governments and NGOs contributes to the sustainability of health interventions by improving integration within existing health systems and strengthening institutional support (Pallas et al., 2018).

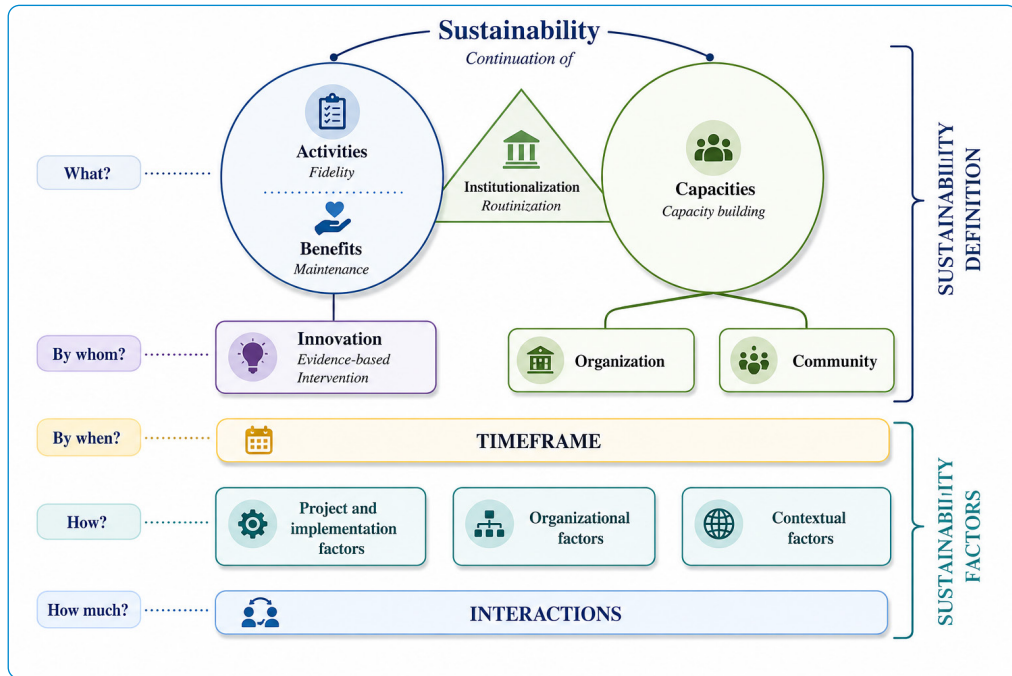
Public health literature further suggests that multisectoral partnerships can address broader social determinants of health by integrating efforts across education, economic development, environmental management, and healthcare sectors (Fabbro et al., 2016). Such collaborations enhance the availability of resources and create supportive environments for sustaining health outcomes.

Therefore, partnership development should be considered a strategic component of sustainability planning, particularly in resource-limited settings where organizational capacities may be constrained.

Institutionalization and Sustainability of Health-Based Projects

Institutionalization refers to the process through which project activities, practices, and innovations become embedded within organizational structures, policies, and routine operations. It is widely regarded as a critical pathway to sustainability because it reduces reliance on individual actors and temporary funding arrangements.

The literature conceptualizes institutionalization as both a process and an outcome. As a process, it involves integrating project practices into existing systems, developing organizational capacity, and establishing supportive policies and governance mechanisms. As an outcome, institutionalization reflects the extent to which interventions become normalized and accepted as part of standard practice (Kezar, 2007; Moore et al., 2017).

Figure 2*A Framework for Sustainability and Institutionalization*

Note. Authors based on (Bossert, 1990; Shediach-Rizkallah & Bone, 1998; Chambers et al., 2013; Iwelunmor, et al., 2016).

Research indicates that institutionalized interventions are more likely to persist over time because they are supported by organizational norms, regulatory frameworks, and dedicated resources (Scott, 2007). Studies from Nepal have shown that community-based health programs achieved greater sustainability when they were integrated into formal health systems and supported by local institutions (Kc et al., 2020).

Institutionalization also contributes to organizational learning, capacity development, and continuous improvement. Consequently, sustainability planning should incorporate strategies that strengthen organizational structures, build local capacity, and promote policy integration to ensure that project benefits endure beyond the initial implementation period.

Conclusion

The reviewed literature demonstrates that the sustainability of health-based projects (HBPs) is a multidimensional and context-dependent phenomenon shaped by interrelated social, financial, organizational, and institutional factors. Rather than being determined by a single variable, sustainability emerges from the interaction of multiple drivers that collectively influence the long-term continuity and effectiveness of health interventions. Community involvement enhances ownership, participation, and local capacity; service charges contribute to financial viability but raise important equity concerns; customer care strengthens trust, satisfaction, and service utilization; and financial resources ensure operational continuity and organizational

resilience. Together, these factors underscore that sustainability is a dynamic process requiring integrated and context-sensitive management strategies rather than isolated interventions.

Building on this synthesis, the study develops a conceptual framework that focuses on four key independent variables—community involvement, service charges, customer care, and financial resources—and their influence on the dependent variable, sustainability of health-based projects. This framework is particularly relevant in the context of Nepal, where NGOs play a significant role in delivering health services under conditions of resource constraints, donor dependency, and diverse community needs. Existing empirical evidence from Nepal, including studies on community-based health and nutrition programs, highlights the importance of community engagement and capacity building as central drivers of sustainability, while also pointing to gaps in addressing financial and service delivery dimensions comprehensively.

Despite growing scholarly attention, several gaps remain in the literature. First, most existing studies are cross-sectional, limiting understanding of how sustainability evolves over time. Second, there is limited empirical integration of financial, relational (customer care), and community-level factors within a single analytical framework. Third, context-specific evidence from developing countries such as Nepal remains limited, particularly regarding how socio-economic disparities, governance structures, and health system constraints shape sustainability outcomes. Future research should therefore adopt longitudinal and mixed-method approaches to better capture causal relationships and dynamic changes in sustainability processes.

Furthermore, future studies should expand the conceptualization of sustainability beyond financial continuity to include equity, service quality, institutional integration, and community

empowerment. Comparative studies across different regions, organizational types, and levels of health systems are also recommended to strengthen the generalizability of findings. There is also a need for evaluation studies that assess the effectiveness of specific sustainability-enhancing interventions, such as community engagement strategies, pricing models for service charges, customer care improvements, and diversified financing mechanisms.

In conclusion, enhancing the sustainability of health-based projects requires a balanced integration of community, financial, and service delivery dimensions supported by strong institutional structures. Strengthening these interconnected factors will be critical for ensuring that NGO-led health interventions remain effective, equitable, and resilient in the long term.

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