

CRITICAL CHAIN MODEL AND SUSTAINABILITY OF PROJECTS: A THEORETICAL PERSPECTIVE

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Abstract: The study was on critical chain model and sustainability of projects. This research was a desktop review carried out by the researchers for purposes of the evolution, key concepts, theoretical prepositions as well as empirical literature on critical chain model and sustainability of projects. In view of the gaps identified, the principal researcher proposes to carry out a study on critical chain model and sustainability of Food Security Projects in the Lower Eastern Kenya which will apply descriptive, correlation and multiple regression analyses where primary data based on questionnaire will be used.

Keywords: Critical Chain Model, Political Factors, Technological Factors, Social Factors and Sustainability of Projects.

1. INTRODUCTION AND BACKGROUND

Project sustainability denotes the ability of a project to maintain its benefits during its projected lifetime (Jennings, Browning & Rigolon, 2019). It aims at creating and launching a project capable of continuing to generate benefits after donor input has been withdrawn (Geneletti, La Rosa, Spyra & Cortinovic, 2017). Efforts to develop a sustainable project should be integrated from the onset of project design (Linnenluecke, Verreynne, de Villiers Scheepers & Venter, 2017). Project sustainability is dissected into various sustainability dimensions and this includes institutional stability, continuous flow of benefits, and equitable distribution of benefits arising from the project, active community involvement and participation in the project, continuous operation of project structure and maintenance of environmental stability (Batselier & Vanhoucke, 2017). History has shown that not long after donor funding and other support is withdrawn, once vibrant community development projects slows down due to either absence of funds, poor maintenance of the project by the community, lack of reliable project planning processes or basically non viability of the project in the target population (Elmqvist, Andersson, Frantzeskaki, McPhearson, Olsson, Gaffney & Folke, 2019).

Kim and Ronny (2009) study on European Commission funded research concluded that there was absence of clear sustainability strategies and project management competencies. They therefore called for need in building sustainability in the organization structure rather than having it as an adhoc without prior plans. Sabini (2016), emphasized on the role of project management professionals in ensuring sustainability. According to him, they possess technical skills and competencies required for such initiatives. He further emphasized that their importance is not limited to their functional roles but rather to a broader institutional role that enable them accomplish changes. Such roles involve challenging existing practices, assumptions and arrangements to ensure continuity and project goals realizations.

According to Eid (2009), Sustainability strategies need clear objectives to ensure they are attained. However, poor economies as well as political unrest in most African countries inhibit sustainability compared to other continents. Previous findings suggested inclusion of proper training component, clear definition of project goals, significant funding during project lifetime, and integration of activities into established administrative structures.

1.1 Sustainability of Projects

According to the World Commission on Environment and Development, sustainability is a form of progress aimed at meeting needs of present while at the same time ensuring that ability of future generations is not compromised in meeting their needs. This definition emphasizes future orientation as key in any sustainability initiatives. International Institute for Sustainable Development (2010) describes sustainability as the adoption of activities and strategies that meet the current needs of the project and stakeholders whilst ensuring protection and enhancement of human and natural resources that will meet the future. Project sustainability is all about incorporation of economic, environmental and social aspects project activities summed up as three-P concept.

According to Soma, Dijkshoorn-Dekker and Polman (2018), there exists a gap in the managerial levels of projects regarding the ability to incorporate sustainability in processes of projects. The author argues for a need to incorporate these concepts in the function of project management as it plays a significant role in organizations in view of sustainability. In regard to sustainability and project management function, Atlin and Gibson (2017) indicate the need to comprehend tensions between various stakeholders with the tradeoff involved there. Managerial competency is the basis of sustainability of projects in addition to ability of considering business plans and different stakeholders.

Project sustainability has been operationalized in different ways by a number of scholars including transparency and accountability (von Wirth, Fuenfschilling, Frantzeskaki & Coenen, 2019). According to Abdul, Hadi, Faudzi, Rohana and Nazirah (2014) various indicators can be used to measure sustainability. They include reduction in overall operational and development cost, increase in number of beneficiaries, increase in level of air and water quality, increase in social participation, ability to utilize local resources and general continuity of the project..

2. THEORETICAL REVIEW

Stakeholder theory was introduced Freeman in 1984. The theory holds the view that corporations in carrying out their activities should consider the interest of other stakeholders and not just internal stakeholders. The protection of the several interests of stakeholders by institutions is advocated for by this theory Soma *et al.* (2018). Broader set of stakeholders are accounted to as against just internal stakeholders. The activities of these stakeholders which make up the operating environment of businesses have impact on the activities of organizations, thus, their importance. In view of this theory, management need to strike a balance between managing the interest of stakeholders and potential conflict influencing the realization of goals and objectives.

Contingency theory was propounded by Fielder in 1960. The preposition of this theory asserts that no single type of structure in an organization is directly or equally applicable to other organizations. Organizational effective is reliant of the match or fit between the type of technology, size of the organization, environmental volatility, and features of the structure and information systems of organizations (Atlin & Gibson, 2017). Contingency theory holds that certain management practices or styles which are compatible to some institutions may not be with others due to varying corporate settings as well as external features. As such, denoting that, no standard management practices are applicable to all institutional settings. Contingency theory is relevant to this study as it describes the relationship between the context and structure of social factors and sustainability.

Systems theory was advocated by Parsons in 1960. A system does not exist in a vacuum as it comes about in specific setting that is environment or boundary. In view of the prepositions of this theory, government functions in an environment which encompasses public inputs through demands for, or support towards government actions or inactions. Demands that are translated as societal needs are processed and converted into outputs through conversion mechanism. System there stands as a processing unit which the various public demands and feedback or output to the environment are processed. Environment directs as well as directs what strategy makers and implementers can do effectively. Projects are emanate due to public demand, as such the sustainability of these projects depend on the system attributes which projects fall under.

2.1 Empirical Review

Hussin (2013) further emphasized that sustainability principles should be practiced throughout the project life cycle. Previous work by Sunachiz, Akadiri, Silvius & Schipper (2014) established that difficulties experienced in sustainability of constructions projects in South Africa include cost management, lack of stakeholder's incentives, time constraints, and inadequate skills.

Tamiya, Zanoxolo and Nikiwe (2016) opined that legislation and policies related to sustainable projects and project management needs to be analyzed to establish its impact on the challenges experienced with application of sustainability on project management. Their study on construction projects in South Africa deduced that sustainability difficulties were stakeholder, process, finance, and project management. Other difficulties were cost related, stakeholder related, and knowledge related.

Zhang, Wu, Shen and Skitmore (2014) did a research on the sustainability of construction projects. It was documented that the social impacts of projects ought to be well considered before the kick-off of projects. It was documented that mostly for a construction to be carried out, some interruption of essential services may occur and therefore the need for engaging the affected community for purposes of negotiating the various aspects of the projects such project schedule. It was recommended that contractors should be mandated by the community to incur the expenses of rehabilitating the environment such as planting of trees upon the completion of projects.

Macharia (2016) examined road construction projects focusing in Embakasi, Nairobi County, Kenya. It was observed that cases of stakeholders being engaged before road construction projects had high likelihood of adequate impact assessment done before commencement of projects. All stakeholders' concerns will be considered in the planning phase of the projects, thus, averting the possible occurrence of any possible collision in the implementation phase. The engagement involved workshops with stakeholders and public meetings during the drafting of the Environment Social Impact Assessment (ESIA) report. The stakeholders groups included small scale traders' associations, community representatives, Government institutions (water regulatory bodies, KURA and KeNHA among others). Agreements were reached during these sessions and there was minimal resistance from the stakeholders during the implementation as a result of their continuous involvement.

Ochunga and Awiti (2017) assessed the influence of stakeholder participation on sustainability of Community Development Projects implemented by Plan International in Homa Bay Town Sub-County, Kenya. Passive participation among stakeholders and sustainability of community development projects had negative and significant nexus. Interactive participation among stakeholders and sustainability of community development projects had positive and significant nexus. Functional participation among stakeholders and sustainability of community development projects had positive and significant relationship. Optimum participation among stakeholders and sustainability of community development projects had positive and significant nexus.

Gitoga (2018) examined the factors influencing sustainability of non governmental organizations in Nairobi county, Kenya. The general objective was determining the factors affecting sustainability of non governmental organisations in Nairobi, County Kenya. Community engagement, fund development and human resources had positive influence on sustainability of NGOs. Majority of respondents were in agreement that community engagement aspects of collaborating with another NGO, corporates, governments and local community will improve the sustainability of NGOs.

Kisavi (2019) studied the critical factors influencing performance of road construction projects in Kiambu County, Kenya. Performance of road construction projects was found to be influenced by contractor capacity, project funding, project monitoring (evaluation) and project planning. The study recommended that road construction projects financiers need to ensure that the selected contractors are those with strong capacity. Additionally, timely and adequate road construction financing of projects need to be done and also regular monitoring and evaluation of projects. It was recommended that proper project planning to be undertaken so as to have successful performance of road construction projects. Stakeholders' involvement had no significant influences on performance of road construction projects.

Ngare and Cheluget (2019) studied the role of stakeholder involvement in the Sustainability of Projects with focus on Nyeri County Referral Hospital, Nyeri, Kenya. The research focused on how involvement of stakeholders influences sustainability of funded projects in public hospital while focusing on a case of HIV/AIDS projects funded at Nyeri County Referral Hospital. While focusing on 137 employees from the HIV/AIDS programmes funded at Nyeri County Referral Hospital as the population, the regression outcome indicated that stakeholder involvement significantly influenced project sustainability. Stakeholder involvement at all stages of the process was concluded to lead to the success of the project.

2.2 Proposed Conceptual Framework

The proposed conceptual framework is depicted in Figure 1 below where the associations between critical chain model and sustainability of projects are shown.

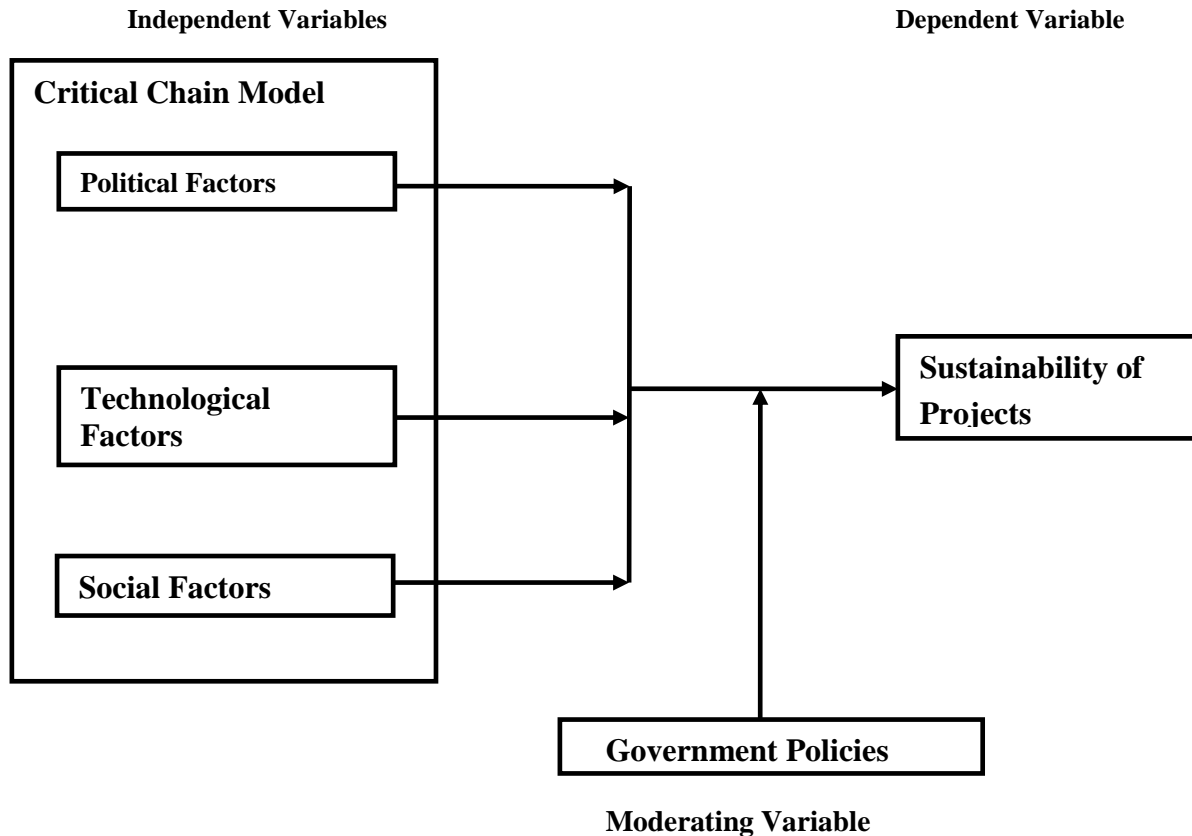


Figure 1: Conceptual Framework

Source: Researcher (2021)

3. METHODOLOGY

This research was a desktop review carried out by the researchers for purposes of the evolution, key concepts, theoretical prepositions as well as empirical literature on critical chain model and sustainability of projects. In view of the gaps identified, the principal researcher proposes to carry out a study on critical chain model and sustainability of Food Security Projects in the Lower Eastern Kenya. The study will apply descriptive, correlation and multiple regression analyses where primary data will be used which will be sourced using a questionnaire.

4. FINDINGS

From the review of various theoretical and empirical works, it was found that theories such as Stakeholder Theory, Contingency Theory and Systems Theory provide theoretical linkages between critical chain model and sustainability of projects. The empirical studies are however characterized by several gaps spanning from contextual, conceptual and methodological gaps. Some of the key aspects of critical chain model were isolated in some of the studies. Despite some of the studies being done in other developing countries, due to the notion that no country is same with another, the findings of one country therefore cannot be directly applicable to another country.

5. CONCLUSIONS AND RECOMMENDATIONS

The study concludes the various research gaps exist with respect to critical chain model and sustainability of projects. In view of this, an empirical analysis is recommended on critical chain model and sustainability of Food Security Projects in the Lower Eastern Kenya.

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