

## Participatory Project Initiation and Performance of Mango Farming Projects in Makueni County, Kenya

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### Abstract

The successful implementation of many feasible and viable mango projects depended entirely on how they were initiated before the start of the planning phase of the project. Project initiation phase, being the first stage of the project management life cycle, is a 'hard-nosed' strategic fit *raison detre*, the main reason for justification that kick-starts or brings the project into existence. This article, extracted from the PhD thesis, presents the importance and worthwhileness of project initiation phase managerial framework, since it entails tentative groundwork project appraisals that come just before the project planning phase starts. In principle, project initiation begins the iterative sequencing of the project's core activities, before all other phases of the project begin. Project initiation phase, therefore, is not just a mere 'tabula rasa' clean slate, an empty project outlay template, since it entails scouting of project ideas, undertaking of feasibility studies to scan and appraise the unpredictable project environment. In addition, project funding sources, availability of appropriate technology and technical expertise are other key considerations for iterative activation. Furthermore, the start-up of the project implies much more microeconomic multiplier effect of the final return on investment of the project. The first phase of the project life cycle should include the project start-up iterations before the project enters the planning phase. Many mango projects went directly into the planning phase without considering or even undertaking an initial project assessment to determine if they were technically feasible before proceeding with the project. The transition to the planning phase with no known initial project selection criteria of using project appraisal tools, revealed project trajectory dilemmas. The exact starting point of project life for activation of base assemblies due to its paramountcy principle, which scrutinizes the feasibility and viability status of the project, is completely lost. Had the project appraisal been conducted, it would have provided sufficient numerical data indicating whether the project was worth the effort to justify the deployment of human resources and planning. Planning for non-assessed projects that never reached the minimum screening threshold is a waste of time planning for scarce resources that should have been spent elsewhere. Planning, without an adequate investment analysis and without a business case, will amount to planning for failure, even before the consequences of the project begin to unravel. The objective of the study was to establish the influence of participatory project initiation on performance of mango farming projects in Makueni County, Kenya. The study had a sample size of 375 respondents selected from a population of 12,622 using a multistage sampling technique. Descriptive and Inferential statistics were used and F-test and Correlation were the main tools of data analysis. The null hypothesis tested, stated that, there was no significant relationship between participatory project initiation and performance of mango farming projects. The study findings depicted significant correlation between Participatory project initiation and mango performance at 95% confidence level, with results showing DF (2,367),  $F=12.23$ ,  $t=1.821$  at the level of significance  $P=0.000<0.05$ ,  $r=0.211$  and  $R\text{ square}=0.044$  and therefore the null hypothesis was rejected. Based on the findings, the study recommends projects to commence with project initiation to enhance mango performance. The study will be beneficial to mango farmers and other stakeholders in highlighting the need to undertake adequate project initiation business case groundwork probe measures. In the long economic project run, the study revealed that mango project's success depended wholly on the way they were firstly initiated.

**Keywords:** Participatory Project Initiation, Performance, Project Management Life Cycle, Sequencing Project Iterative Activities, Project Feasibility Study and Viability, Scouting for Project Ideas, Project Appraisal and Selection Criteria

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### 1.0 INTRODUCTION

This study sought to investigate the influence of participatory project initiation on performance of mango farming projects in Makueni County, Kenya. In every existing project or business activity of whatever magnitude or size, initially started as a project. Enhanced performance of mango projects depended wholly on the way they were firstly initiated by following project initiation managerial framework practices along the

project management life cycle. In a study (Amadi, 2017) sought to establish the relationship that existed between the initiation of the projects and their observed performance during project initiation, involving the whole community to participate on how they wanted their project to run before undertaking planning. *Ibid*, further the study observed that, performance and success of the projects had a high relation to how they were initiated (Amadi, 2017). Properly initiated projects become easier to plan and implement within the triple constraints of time, cost and scope in order deliver a quality, unique product or service that met the expectations of stakeholders. Participatory project initiation should always be incorporated in mango pre-harvest phase to realise the enhanced quality and quantity of the mango fruit. It was reported in a study that mango farming was riddled with many problems (Muthini, 2015).

There were numerous problems experienced in the initiation stage, which included, but not limited to, undertaking a feasibility study to ascertain mango project viability, the state of the business portfolio case of the project, available sources of finance, expertise of extension personnel to be procured, among many others. For the attainment of quality and large quantity of mango production needed an organized institutional framework, and proactive nodal organizations to deliver beneficial change to mango farmers through marketing strategies (Purushottam, 2015). For instance, India, even being the world's largest producer of mangoes globally faced numerous challenges of middlemen menace, dearth of infrastructure and lack of cooperative effort, besides lack of enough support from nodal government institutions (Purushottam, 2015). *Ibid*, these issues were further exacerbated further by non-availability of the right mango varieties ideal for industrial processing, problems of coordinating stakeholders and lack of adopting a strategic-fit approach to turnaround the mango production, instead of piecemeal approach was adopted which later affected the whole mango value chain feasible solutions (Purushottam, 2015). In order to improve mango production, mango projects should run in form of agribusiness projects, and backed by good project managerial practices that are deemed strategic fit to spur mango economic growth and markets. Improved mango production should commensurate with the local and global markets in order to avoid pre-harvest and post-harvest losses occasioned by lack of continued support of coordinating government institutions and other participating nodal and network organizations (Purushottam, 2015). It is important, therefore, to address poverty pathologies experienced in Makueni mango farming zones through the participatory project initiation to enhance performance.

### 1.1 Statement of the problem

Most project challenges can be traced from the project initiation phase since the initial iterative project activities had not been incorporated at the initial kick-off of the project. In order to improve performance, there is a need to look keenly into the conceptualization process, how the projects were firstly initiated before planning for implementation in the whole mango production chain from pre-harvest to post-harvest stages. This is deemed to isolate the impending challenges and economic bottlenecks that recurred from time to time along the project initiation stage. Mango fruit constraints occur due to variations of environmental factors which are exacerbated by inefficient participatory project initiation practices. Lack of identifying prerequisite technical skills during project initiation stage predisposes pre-harvest and post-harvest too many problems that affect mango performance at the start-up stage. Proper project initiation can transform and revolutionize the mango fruit performance, to provide sustainable income and employment opportunities to the rural economy. Improved mango production is the hallmark of global mango development prospects in developed and developing countries. But there is a breakdown along the line of agricultural extension services and expertise of stakeholders, which is essential for enhancing participation in mango farming projects to achieve sustainable performance. Most mango problems stem way back during the project initiation stage.

Project initiation, is a Project Planning and Management term that encompasses project identification, feasibility studies and appraisals of the project resources before planning process can be undertaken in any project. Projects consume a lot of resources and it is assumed that, a project cannot proceed to planning stage unless the project resources are already available or identified to be planned for, since mere planning without monetary and human resources cannot kick-start a project. And hence, the common saying that, without project resources is equivalent to 'planning for castles' in the air since nothing tangible is achieved through mere planning for the sake of it! Mango farming business case feasibility and viability is usually explored at the project initiation stage, to evaluate and quantify if it is worthwhile given the projected project outlay return on investment (ROI). Farming by households is indispensable, it is essential for earning extra income (Andayani, 2017). Participatory project initiation is the starting phase, from pre-harvest to post-harvest stages. It is the most important phase where mango propagation as the robust agribusiness case is developed, by incorporating good management practices in mango fruit production. The increase in worldwide farming of mango is informed of its rich benefits to human health; it has an initial starting point (Izli, Gökçen and Taskin, 2017). In project initiation phase, the mango production business case should be evaluated with a clear understanding of the prevailing local and global market strategies, microeconomics multiplier effect issues of supply and demand, pricing and consumer behaviour to enhance mango performance. It is therefore urgent to develop local varieties of mangoes

that are less susceptible to diseases and pest infestations and adaptable to the local climate. The project initiation phase should also undertake feasibility studies, to probe the implications of planting exotic mango varieties that compete unfavourably in the international markets with countries that developed most of modern mango varieties.

### 1.2 Research Objective

It was to establish how participatory project initiation influenced the performance of mango farming projects in Makueni County, Kenya.

### 1.3 Research Hypothesis

Hypothesis Testing:

H0<sub>1</sub>: There is no significant relationship between participatory project initiation and performance of mango farming projects in Makueni County, Kenya.

H1<sub>1</sub>: There is a significant relationship between participatory project initiation and performance of mango farming projects in Makueni County, Kenya.

## 2.0 LITERATURE REVIEW

The literature review encompasses projects initiated in existing global literature with respect to the performance of mango farming projects in Makueni County, Kenya. Performance starts way back during pre-harvest initiation phase since quality and quantity of mangoes can only be enhanced at the initial stages, and not during the post-harvest stages, when damage had already occurred. The participatory project initiation identified the gaps in the whole spectrum of project initiation along the project management decomposed phases as put forth by many scholars (Warburton and Cioffi, 2014; Mbeche, Nyamwange, Magutu and Onsongo, 2013); Westland, 2008; Rowe, 2007; Lewis, 2007; PMBOK, 1996).

### 2.1 Participatory Project Initiation and Performance of Mango Farming Projects

In project planning and management, initiation is the first stage of project life cycle. This phase is fundamentally important, for it is the initial starting point for organizations and individual projects, since it identifies all the project's resources supported by its triple constraints of scope, cost and time, before moving to the second phase of planning. In the world of projects, initiation is a word borrowed from the original Latin word, *Initium/initiatus* or *initiare*, which means to 'start from beginning', to commence, that is to originate a project. That is why it is called project initiation, to show project managers the exact starting point of a project management life cycle in any project (Westland, 2008; Mbeche, Nyamwange, Magutu and Onsongo, 2013). In principle, Project Initiation creates the project, which leads to its eventual existence; the *raison detre* central reason for the existence of such a project. Due to this, project initiation definitely is not a *tabula rasa* (an empty project outlay slate), as it contains key project outlay of resources, the business case, project charter, project team, among others, that need to be planned for in the preceding 2<sup>nd</sup> project planning phase. Without project initiation which creates the project idea, it becomes an empty project outlay template, planning for resources without vision and mission, and is reminiscent to planning for castles in the air, since no resources had been identified to warrant any planning endeavour. In essence, project initiation begins or starts any project of whatever magnitude or size, even small projects by individuals are commenced via this approach (Rowe, 2007).

There has been a fervent debate and divergent views of project management, with the majority of scholars having a consensus on project initiation common '*parlance*', to mean a word that points to the beginning of a project management lifecycle (PMBOK, 1996; Lewis, 2007; Westland, 2008; Burke, 2013; Rowe, 2007, Mbeche *et al*, 2013). *Ibid*, all agree project initiation starts before the project planning phase. And further that, project initiation kick-starts the project cycle in order, starting with the initiation, planning, and implementation, monitoring and controlling and closing. There exists a divergent view that a project starts with planning, *initiation*, execution, monitoring, and closing (Investopedia, 2019). This confounding project view, is a mix of misunderstanding of Fayol's General management (Storrs, 1949; Fayol, 1916) on the modern discipline of Project Planning and management, which is a cross-pollination of many academic disciplines. A project starts with the initiation, planning and for implementation and M and E (Mbeche *et al*, 2013; Westland, 2008). In an expanded form before decomposition of project phases, a project cycle starts with the project idea/conception, project identification, project preparation, project appraisal, project selection, negotiation and financing, planning for implementation, project implementation, monitoring and reporting and evaluation (Mbeche, Magutu, Nyamwange, and Onsongo, 2013; Westland, 2008; PMBOK, 1996). Even in the Fayol's General Industrial Management, its **key activities** do not start with planning, but commences with financial, technical, commercial, security, accounting and finally the managerial functions which are composed of planning, organizing, staffing, directing/leading and controlling (Fayol, 1916; Gulick and Urwick, 1937; Storrs, 1949).

Project Initiation is the starting point for coming up with quality projects, in the study as it entails mango

pre-harvest phase. In achieving quality projects, developing an agribusiness model which ensures continuity of mango supplies is paramount (Andayani, 2017). It is in this initial pre-harvest phase that a mango farmer seeks for the prerequisite mango information needed to start mango farming projects. A study found out that the mango tree fruit is important for its nutritional value besides being of great economic potential, which is still untapped (Arinloye et al, 2017). Collaboration with experts is needed to understand how feasible and viable mango production is in Arid and Semi-Arids Lands (ASALs); the right soils, climatic conditions, rainfall and irrigation. According to Westland (2008) project initiation phase, there are six project initiation iterative process of activities comprising the development of a project business case, feasibility study, establishing TORs and the appointment of project teams. However, this seems somewhat theoretical, but in the real sense, development projects start in this way in the conceptualization of the project idea. Post-harvest mishandling of mangoes has affected the quality of mangoes, affecting prices and loss of local and global markets (Arinloye et al, 2017).

Mango cultivation in West Java faced numerous problems ranging from manufacturing, pre-harvest to post-harvest due challenges of implementation, innovation and dissemination of information and technology by relevant actors who lacked good synergy in complex mango farming methods (Andayani, 2017). The overall performance of mango farming starts in the project initiation phase where the project mango production case is conceptualized and quality root-stocks and seedlings are appraised of their suitable climate adaptability. In order for mangoes to enter the world's globalized markets, they must be of good quality and large quantities, combined with a sustainable supply all year round (Karyani, Utami, Sadeli, Rasmikayati, Wiyono, and Syamsiyah, 2016). Formulation of optimized mango farming can be achieved via proper coordination and collaboration among stakeholders through control of production activities, performing of intensive coaching, mentoring, adapting and adopting mango farming as an agribusiness venture (Andayani, 2017).

Participatory project initiation influences the overall performance of mango farming projects in different environmental setups when initiating quality mango projects. Policy regulation on partnerships with industrial companies, supported by government to structure markets, would enhance the principles of justice to reorganize and establish cooperatives that strengthen farmers' agribusiness remedial measures (Andayani, 2017). Participatory project initiation plays a major role in the implementation of better performing of the mango projects. The groundwork on mango business case plans starts with quality mango saplings in the whole project initiation phase. The mango fruit needs a technical advisory approach since it encounters many that range from extension services to markets. The Mango fruit is grown in most of the world's continents, but it is concentrated mainly in Asia, especially India, which produces approximately 15 million metric tonnes every year; becoming a world leader in mango production for local and global markets (Mitra, 2016). Participatory project initiation is key in enhancing performance of mango projects in the long run. The lower level of performance of NAADS agricultural projects was due to lack of farmers' stakeholder commitment to NAADS policy and practices starting with the project initiation phase (Bashir *et al*, 2013).

In developing a project business case (Westland, 2008), shows the process of identifying the business problem, opportunities to address return on investments; needs project intervention methods to solve a long standing problem. After identifying the optimal practice in the initiation phase of mango projects, a feasibility study is critical in finding out the viability of projects. Improved agricultural projects are poised to develop global communities and extension systems in achieving developmental targets (Suresh, Huang, Venkatesh and Yumei, 2015). ). Agricultural research stations are important in uncovering issues which make agricultural projects not to attain food sufficiency in developing countries. A feasibility study during the project initiation phase would uncover some of the project impediments, as well as opportunities so as to maximize the project's implementation success. A feasibility study is essential in uncovering positive and negative outcomes, since they must be known in advance for enhancing project activation to achieve the envisaged mango stakeholders' expectations and goals. There is a concerted effort to make agricultural research and extension systems to function optimally to increase performance output (Suresh, Huang, Venkatesh and Yumei, 2015).

As part of project scope, time and forecasting of the financial outlay and its expected benefits in monetary and non-monetary terms; there must be a viable mango project business case and factual interventions by various mango actors. To achieve the project case, a detailed project appraisal (numerical and non-numerical) report and project feasibility study are critical in for future optimal performance of mango farming projects. Feasibility studies will uncover the unknown opportunities and drawbacks that will be needed to be addressed monitoring and evaluation control measures, to avert projected failures in mango cultivation. In project terms, a feasibility study in the project initiation phase entails project identification approach, preparation and description of a project drawbacks to address failures, before starting the planning phase. The feasibility issues encompasses commercialization matters, management and organizational approaches, technologically savvy mango actors, markets, environmental governance, socio-economic trends and cultural factors, that may become an impediment to project planning and implementation. In agricultural project setup, environmental issues are considered on climatic conditions since they are an impediments to the projects' success that depend on seasonal rainfall. On environmental factors, the human element in project management is important for policy crafting, political

leadership and sustainability socio-economic factors that affect mango farming projects. Unreliable extension policies have led to low production in the agricultural sector, which in the long run affects performance (Suresh, Huang, Venkatesh and Yumei, 2015).

## 2.2 Theoretical Framework

This study was guided by project management theory developed by (Warburton and Cioffi, 2014). It reinforces the principle of ‘paramouncy’ of the project initiation start-up phase, which is the beginning point of the project management life cycle. The paramouncy principle of participatory project initiation is that, it brings projects to life. Sherry Arnstein's Citizen Participation Ladder Theory provides for a participatory community-based planning process (Arnstein, 1969), by bringing together a variety of individual and community project stakeholders to participate in projects. The study also adopted stakeholder theory (Freeman, 1984), because it has a direct impact on project stakeholders in order to demonstrate a unique beneficial change. The Theory of Constraints put forward by Eliyahu Moshe Goldratt (Goldratt, 1990), ensured that the three competing constraints, cost, time and scope of the project were met. In the Conceptual Framework Fig.1, participatory project initiation is the independent predictor variable of the study, while the performance of mango farming projects is the dependent variable:

## 2.3 Conceptual Framework

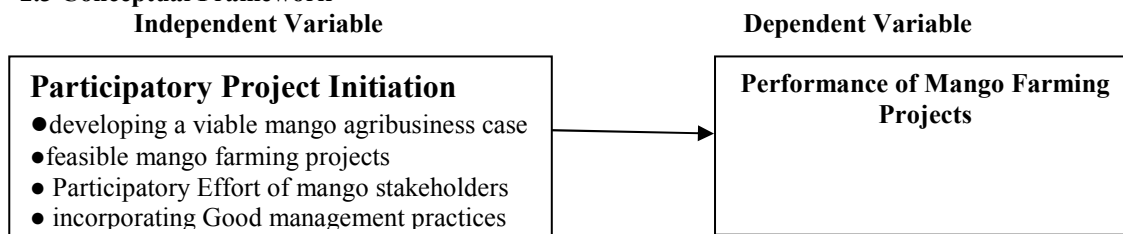


Fig 1. Conceptual Framework for Participatory project Initiation and Performance of Mango Farming projects in Makueni County, Kenya.

## 3.0 Research Methodology

Research methodology consisted of the research paradigm, research design, target population, sample size, sampling procedure, research instrument's validity and reliability, data collection procedures, techniques of data analysis, operational definition of study variables and ethical considerations. All these were grounded in the objective one on participatory project initiation and performance of mango farming projects in Makueni County, Kenya.

### 3.1 Research paradigm

The study used a research paradigm as a guide in positivism (quantitative view) and interpretivism (qualitative view) worldviews, in line with the mandatory precondition for a paradigm practice in empirical research (Kuhn, 1962). In this case, the study adopted the pragmatism research paradigm, which allowed the practical use of quantitative and qualitative research methodologies in data collection and analysis. In its empirical basic steady state, Pragmatism paradigm is proactively dualistic in nature, in the way it addresses the problem statement when collecting and analysing primary data in social scientific studies. Pragmatism paradigm concurrently endeavours to utilize the positivism and interpretivism worldviews of the two research approaches of the mixed mode method, the qualitative and quantitative, as they can simultaneously be used for primary data collection and analysis for all social studies. This is the most practical way of approaching the problem statement since pragmatism paradigm allows for practical real-time data collection and analysis of the research phenomenon. The premise behind a research paradigm is basically to enable researchers to choose befitting rational data analysis tools for their studies which would enable them, for instance, to formulate research hypotheses. These would point to inferential and descriptive statistics, in order to make meaningful conclusive inferences and generalizations into the entire study population.

In social sciences research, there are several research paradigms for instance, positivism, post-positivism, interpretivism, constructivism and pragmatism as discussed in details by (Kivunja and Kuyini, 2017). A research Paradigm, therefore, is the researcher's way of looking at the real-world ontological phenomenon being studied, and guided by fewer philosophical propositions adopted from a theory or related worldview concepts. Mostly, these few study philosophical propositions vouched from 'what lies' a priori (before- the subjective theoretical induction in qualitative construct) existing as an ontological Noumenon, and 'what lies' a posteriori (after- the deductive observable experiences which are objective in quantitative construct), existing as an ontological Phenomenon in the Aristotelian physics. Beyond the definitions, this is where the real understanding

of independent variables and one dependent hinges on, in any empirical study. That is why the ontological phenomenon under study can only be approached by use of epistemological theory concepts through a relevant research paradigm. There are three known Aristotelian research, metaphysical philosophies (ontology, epistemology and axiology), which in pragmatically points to the ontological phenomenon under study in empirical research (Saunders, Lewis and Thornhill, 2009). This worldview is in line with William of Ockham's, 'Novacula Occami' (Occam's razor), which delineates the law of parsimony, that entities must not be multiplied beyond necessity in studies (Schaffer, 2015). In scientific research, Occam's razor parsimonious law is usually vouched for because of its simplicity of vouching for a few applicable study propositions over the complexities of heuristic rule of thumb (Salkind, 2010).

Pragmatism research paradigm therefore, is a powerful worldview mechanism which steers a study towards a certain trajectory pathway, and facilitates the strengthening of the two mixed method approaches in research (Rahi, 2017). This worldview corroborates other scientific views on the purpose and the value of utilizing pragmatism paradigm to articulate effectively the research philosophies and the direction of research by doctoral students (Gakuu, Kidombo, Keiyoro, 2018; Collins and Hussay, 2003). A research paradigm, therefore, induces and deduces qualitatively and quantitatively the trajectory of the study pathways. It does this by evaluating the beliefs and its bounding assumptions in practical application, which run concurrently using quantitative and qualitative mixed research method in the collection of primary data and subsequent analysis. The three research philosophies classified as epistemology, ontology, and axiology communicate through a research paradigm (Saunders, Lewis and Thornhill, 2009).

According to (Pike, 1967; Markee, 2012), in any worldview, there is always an exceptionally emic (internal) voice and an etic (external) voice of the researcher and that of the respondents respectively. They communicate across the research paradigm with the epistemological study concepts in the theory, and being connected to the ontological phenomenon studied. This view is illustrated schematically with a conceptual framework, showing an independent variable pointing towards a dependent variable. The 'etic' world viewpoint, therefore, studies the behaviour from outside, by the new researcher concentrating on a particular system of a project organization, while the 'emic' worldview the respondents' is vouched for inside the system (Pike, 1967). The pragmatism research paradigm is documented extensively in this study since it encompasses the use of positivism, which is quantitative, and interpretivism which involves post-positivism/anti-positivism/non-positivism qualitative approach. This allowed the researcher to ask objective Likert scale-type questions that dealt with the quantitative approach. Subjective questions related to the qualitative approach, which included unstructured questionnaires, observational and interview guides, were asked of respondents.

The two mixed approaches examined the influence of the participatory project initiation and the performance of mango farming projects in Makueni County, Kenya. Although there has been fervent debate on the mono-method use, quantitative and qualitative, qualitative or quantitative separately, it has been made clear that utilization of research paradigms' mixed method-mode in social sciences enhanced the relevance of graduate students' research works (Onwuegbuzie and Leech, 2005). The mixed method approach is supported by pragmatism research paradigm since a mono-method is not conclusively good enough, as a single method to collect data due complexities of homogeneity and heterogeneity in a social setup (Martina, 2010). Pragmatism research paradigm fits well in this study since it is logically practical and reasonable way of addressing a research problem since it deals with specific quantitative and qualitative underpinnings within a set timeframe. Pragmatism paradigm is relevant as it uses both quantitative and qualitative mixed research approaches, which gives a concurrent duality in a triangulation of a set of data collected and analysed, and offers a profound rationale of a study grounded in a research theory (Martina, 2010). Further on this, a research paradigm corresponds to the basic idea set of belief system underpinning guided by mixed method research (Gakuu, Kidombo, Keiyoro, 2018; Collins and Hussay, 2003).

Every scientific study is based on the ontological phenomenon in existence, basically how things are in the present state, whereas the epistemological theory concerns how researchers come to know those things (beings or objects of study), and their axiological benefits derived from the overall research (Collins and Hussay, 2003). The dominance of ontological subjectivism and epistemological interpretivism, has been reported in most social science research showing that, there are growing preferences in quantitative and qualitative methods, with more trends indicating growth of positivist studies (Biedenbach and Müller, 2011). Research works should make use of a sequential mixed method topology, which effectively articulates the exploratory purpose, data collection, data analysis, inferences and meta-inferences for generalizations (Cameron, 2015). Therefore, this study followed a methodological dichotomy of mixed method research, which comprises quantitative (positivism), as well an objective reality and qualitative (post-positivism/anti-positivism), a subjective reality of the studied phenomenon (Cameron, 2015).

### 3.2 Research Design

Descriptive and correlational research designs were used in the study. A research design attempts to describe

possible behaviours, values and attitudes on the ground (Mugenda and Mugenda, 2003). It is for this reason, therefore, a research design becomes very important in describing the study characteristics of an individual or a group of people (Kothari, 2005). A design selects just a small portion of the study population (Bhattacharje, 2012). This is because the mixed research mode describes the phenomenon being studied (Antwi and Hamza, 2015). The study investigated on the influence of participatory project initiation on the performance of Mango projects in Makueni County, Kenya.

### 3.3 Piloting of Research Instruments for Validity and Reliability

The piloting found the research instruments valid and reliable for undertaking the study. The pilot test for the participatory project initiation yielded a Cronbach Alpha (a) coefficient of 0.923, which was above the recommended minimum.

### 3.4 Data Collection and Analysis

The study made use of self-administered questionnaires, interview and observation guides. The study collected mixed data, qualitative and quantitative concurrently from the respondents and key informants using the study instruments. The study had 375 respondents, but 369 questionnaires were returned and analysed.

## 4.0 Results and Discussions

This study was to establish how participatory project initiation influenced mango performance. This section analysed the influence of participatory project initiation on performance. Twelve (12) Likert scale items were presented to the respondents and requested to indicate their level of agreement with the given statement on a scale of **1 to 5**, **SD**= strongly disagree, **D**= disagree, **N**= neutral, **A**= agree and **SA**= strongly agree.

### 4.1 Descriptive Statistics

The results are presented in Table 1:

**Table1: Descriptive Analysis of Participatory Project Initiation and Performance of Mango Farming Projects**

No.	Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SD
12a	At mango project initiation there is participation of meso-actors to develop a feasible and viable mango agribusiness case	24 (6.4)	28 (7.6)	108 (29.3)	126 (34.1)	83 (24.5)	3.04	3.32
12b	In participatory project initiation there not availability of researched rootstocks/seedlings	10 (2.7)	22 (6.0)	124 (34.4)	138 (37.4)	75 (20.3)	3.44	3.34
12c	Your mango rootstocks/seedlings are acquired from mango third party nurseries	96 (26.0)	89 (24.1)	52 (14.1)	100 (27.1)	32 (8.7)	2.7	2.51
12d	In the initiation of mango farming projects, labour for planting of seedlings is not hired from experts	15 (4.1)	34 (9.2)	89 (24.1)	129 (35.0)	102 (27.6)	3.6	2.47
12e	At initiation of mango farming projects market channels are always determined in advance	10 (2.7)	21 (5.7)	69 (18.7)	141 (38.2)	128 (34.7)	4.0	3.56
12f	Mango farming is not lucrative compared to other agricultural projects	59 (16.0)	89 (24.1)	109 (29.5)	98 (26.6)	14 (3.8)	2.8	2.49
12g	Mango seedlings in nurseries are not infested by pests and diseases before planting	12 (3.3)	19 (5.1)	127 (34.4)	97 (26.3)	114 (30.9)	3.8	3.75
12h	Most planted seedlings in farms dry and wither few months after planting	112 (30.4)	89 (24.1)	109 (29.5)	35 (9.5)	24 (6.5)	2.03	3.14
12i	The cost of young seedlings is not high and all new mango farmers can afford to buy	10 (2.7)	15 (4.1)	59 (16.0)	219 (59.3)	66 (17.6)	3.9	3.06
12j	You have own nursery for mango seedlings and for sale to prospective mango farmers	69 (18.7)	38 (10.3)	69 (18.7)	100 (27.1)	93 (25.2)	3.3	2.16

No.	Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SD
12k	All your mango seedlings and scions are not acquired from other mango farmers	23 (6.2)	42 (11.3)	65 (17.6)	115 (31.2)	124 (33.6)	3.7	1.82
12l	County Government does not trains mango farmers to incorporate technology skills and other management practices in mango projects	12 (3.3)	42 (11.4)	117 (31.7)	86 (23.3)	112 (30.4)	3.7	1.37
Composite mean and composite standard deviation							3.3	2.75

n=369

Composite mean =3.3

Composite standard deviation=2.75

Cronbach's Alpha (a) Reliability coefficient = 0.923

In Table1, it was established that the composite mean (M) was 3.3 and SD was 2.75, which implied respondents were neutral about participatory Project Initiation influence on performance of mango. The Alpha (a) reliability coefficient of the study was 0.923 on 12 items used to measure the influence participatory Project Initiation and Performance of Mango Farming Projects was 0.923, inferring a very strong internal consistency.

Item 12a sought opinion of respondents with the statement that, at mango project initiation, there was the participation of mango actors to develop a feasible and viable mango agribusiness case. Results (34.4%) indicated by respondents strongly in agreement with the statement. The item' mean was (M) 3.44 with SD of 3.32 indicating respondents were neutral about the statement. This mean was slightly higher than the composite mean, implying the participation of mango stakeholders in the development of a feasible and sustainable mango business case. This was different from the mean of 3.02 in item12b which sought in the statement that, participatory project initiation there was no availability of researched root-stocks/seedlings. The results indicated 37.4% agreed with the statement while 34.4% were neutral. The item had a mean of 3.02 and SD of 3.34 indicating respondents were neutral about the statement. These results disagreed with (Arinloye *et al*, (2017) who argued that, the overall performance of mango farming starts in the project initiation phase, where the mango production case is conceptualized and quality rootstocks and saplings/seedlings were appraised and assessed of climate adaptation. This was supported by the interview guide results where one respondent said;

*"The quality root-stocks and seedlings determined the performance of mango farming, however, we did not get them during initiation stage"*.

Item 12c sought to establish opinion on the statement that, the mango root-stocks/seedlings are acquired from mango third party nurseries. The results indicated that 39.6% of them strongly disagreed, while 34.4% were neutral. The item had mean of 2.7 and SD of 2.51 indicating they were neutral. This mean was less that the composite mean, implying the item did not have an influence on the Performance of Mango Farming Projects. This is because the source of the root-stocks/seedlings may have little influence Performance of Mango Farming Projects. These results were in line with the interview results where one of the farmers said;

*"Most mango farmers have their own nurseries where they grow their own root-stocks/seedlings, although we still have some farmers who still rely on root-stocks/seedlings from mango third party nurseries"*.

Item 12d sought to establish opinion on the statement that, in the initiation of mango farming projects, labour for planting of seedlings has not hired experts. With the results, 35% agreed with the statement while 24.1% were neutral. The item had a mean of 3.6 and SD of 2.47 indicating respondents were neutral. This mean was more than the composite mean, implying the project labour had an influence on the Performance of Mango Farming Projects. These results agree with a study by (Bashir *et al*, 2013), on participatory project initiation which established that mango farming projects, labour was key in enhancing mango farming in the long run. These results were supported by one farmer who said,

*"The poor performance of mango projects was due to lack of skilled labour, stakeholder engagement, mango skills and management practices from the initiation phase of the project."*

Item 12e sought to establish the opinion on the statement that, in the initiation of mango farming projects market channels were always determined in advance. The results indicated that 38.2% agreed, while 18.7% were neutral. The item had mean of 4.0 and SD) of 3.56 indicating they agreed with the statement. Mean was more than composite mean, implying determining market channels in advance influenced mango performance. Further, opinion was sought to establish an item 12f that, mango farming was not lucrative compared to others in agriculture. Results indicated 29.5% were neutral about the statement while 26.6% agreed. The item had mean of 2.8 and SD of 2.49 indicating they were neutral. This mean was less than the composite mean, implying the other crops did not influence the performance of Mango.



Item 12g sought to establish opinion on the statement that, mango seedlings in nurseries are not infested by pests and diseases before planting. The results indicated 30.9% strongly agreed while 34.4% were neutral. The item had a mean of 3.8 and SD of 3.75, indicating respondents were neutral. The mean was more than composite mean, implying that pests and diseases had an influence on the Performance of Mango Farming Projects. The results agree with one of the farmers who said,

*“When we plant our mango seedlings in nurseries, they are less infested by pests and diseases before planting, although after planting pests and diseases affect the after plants seriously”.*

Item 12h sought to establish opinion on the statement that, most planted seedlings in farms dry and wither few months after planting. Results indicated 30.4% strongly disagreed and 29.5% neutral. The item had mean of 2.03 and SD of 3.14 indicating that the respondents disagreed with the statement. The mean was less than composite mean, implying the item had an influence on performance.

Item 12i sought the opinion of respondents on the statement that, majority (59.3%) strongly agreed with the statement while 16.0% were neutral. This item had a mean of 3.9 and SD of 3.06 indicating respondents were neutral with the statement. The mean was more than the composite mean, implying the cost of young seedlings had an influence on mango performance. Item 12j sought opinion of the respondents on the statement that, they have own nursery for mango seedlings and for sale to prospective mango farmers. The results indicated that the majority (27.1%) agreed with the statement while 18.7% were neutral. The item had a mean of 3.3 and SD of 2.16 indicating respondents disagreed with the statement. The results were supported by one mango farmer who said,

*“Most of mango farmers have their own nurseries for mango seedlings, which is cheaper than buying the seedlings. Moreover, when seedlings are sold, the income can be used to purchase other farm inputs.”*

Item 12k sought to establish opinion of the respondents on the statement that, all your mango seedlings and scions are not acquired from other mango farmers. The results indicated that the majority (33.6%) strongly agreed with the statement while 17.6% were neutral. The item had mean of 3.7 and SD of 1.82 indicating the respondents disagreed with the statement. Item 12l sought an opinion on the statement that, all the mango seedlings and scions are not acquired from other mango farmers. Results indicated that the majority (30.4%) strongly agreed with the statement and 31.7% neutral. The item had mean of 3.7 and SD of 1.38 indicating that the respondents agreed with the statement.

## 4.2 Inferential Statistics

Correlation Analysis and Linear Regression Model 1 for Objective 1

The original regression model formula in statistical equation:  $Y = \alpha + \beta X + \varepsilon$ .

Y denotes the one dependent variable,  $\alpha$  is constant gradient slope of the regression line depicted in the Rene Descartes' Cartesian XY plane scatter plot,  $\beta$  (beta) slope of regression line amount of change into Y, X is the independent random variable that can take any form or change, and  $\varepsilon$  is the stochastic *error* term for estimating the regression model as shown:

$Y = \alpha + \beta X + \varepsilon$ , hence the regression equation is universally written this way.

Y = Dependent variable, performance mango farming projects

$\alpha$  = constant term equals value of Y when the value of X= 0

$\beta$  = Beta is the coefficient of X which is the slope of the regression line of how much Y changes for each one unit change in X as depicted in the Cartesian plane XY scatter plot.

X= Value/s of independent variable (X), is the participatory project initiation Variable, the predictor which explains explicitly or implicitly the values of X into Y.

$\varepsilon$  = Stochastic random error term.

This study used descriptive and inferential statistics. The hypothesis and the model of this research:

## 4.3 Hypothesis Testing

H<sub>0</sub><sub>1</sub>: There is no significant relationship between participatory project initiation and performance of mango farming projects in Makueni County.

H<sub>1</sub><sub>1</sub>: There is a significant relationship between participatory project initiation and performance of mango farming projects in Makueni County.

The hypothesis were stated in the null and alternative in order to reject or fail to reject in accordance with comparative analogy advanced by (Fisher, 1935).

Mango performance being the dependent variable, is the function of  $f$  (participatory project initiation variable), and hence the simple regression model:

Model 1

$Y = f(X_1, \varepsilon)$ ,

$Y = \alpha + \beta_0 X_1 + \varepsilon$ ,

**Model 1:  $Y = f(X_1, \varepsilon)$ .**

#### 4.4 Relationship between Participatory Project Initiation and Performance of Mango Farming Projects

This study used Pearson's moment correlation technique in determining the relationship between Participatory Project Initiation and Performance of Mango Farming Projects. Table 2 presents the Correlation results.

**Table 2: Correlation between Participatory Project Initiation and Performance of Mango Farming Projects**

		Participatory Project Initiation	Performance of Mango Farming Projects
Participatory Project Initiation	Pearson Correlation	1	.601(**)
	Sig. (2-tailed)		.000
	N	369	369
Performance of Mango Farming Projects	Pearson Correlation	.601(**)	1
	Sig. (2-tailed)	.000	
	N	369	369

\*\* Correlation is significant at the 0.01 level (2-tailed).

Table 2 results indicated a significant positive relationship between Participatory Project Initiation and Performance of Mango Farming Projects ( $r=0.601$ ,  $p=0.000$ ). This depicts a very strong association between Participatory Project Initiation and Performance of Mango Farming Projects, in being significant. This correlation test established Participatory Project Initiation as a contributor in influencing on the performance of mango farming projects was significance. Project Initiation had significant influence on mango performance. Based on these findings, hypothesis ( $H_{01}$ ), which stated there was no significant relationship between participatory project initiation and performance of mango farming projects in Makueni County Kenya, were rejected. It was therefore concluded that, there was a significant relationship between participatory project initiation and performance of mango farming projects in Makueni County.

Following the correlation results, the researcher used simple linear regression analysis to test whether Participatory Project Initiation statistically influenced Performance of Mango Farming Projects. Table 3 presents the simple linear regression results.

**Table 3. Simple Linear Regression Results Influencing Association between Participatory Project Initiation and Performance of Mango Farming Projects**

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.211(a)	.044	.042	12.758		
ANOVA (b)						
Model		Sum of Squares	DF	Mean Square	F	Sig.
1	Regression	91.05	2	45.53	12.23	.000(a)
	Residual	48.07	367	62.68		
	Total	55.62	369			
Coefficients (a)						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	3.921	3.137		10.172	.000
	Participatory Project initiation ( $X_1$ )	1.075	.587	.261	1.821	.000

a. Dependent Variable: performance of mango farming projects

b. Predictor Variable: participatory project initiation.

Table 3 results indicate that,  $DF(2,367)$ ,  $F=12.23$ ,  $t=1.821$  at the level of significance  $P=0.000<0.05$ ,  $r=0.211$  and  $R\text{ square}=0.044$ . The results signified at the 5% level significance and 95% level of significance, the test was statistically significant and therefore, the null hypothesis was rejected.

Table 3 results indicate adjusted R squared is 0.42 which shows that 4.2% of the variations in performance of mango farming projects was influenced by Participatory Project initiation, while the other variables were determined by other factors outside this model. Again, the results of ANOVA indicate model is statistically significant,  $F(2, 367)=12.23$ , with a p-value 0.000. In fitting the best fit of least square method as illustrated on Table 4.14, the researcher obtained the model  $Y = a(\text{constant}) + BX$  (beta denotes the gradient amount of change of the independent variable into the dependent); this is where  $a = 3.921$ ,  $b = 10.172$  and  $X = 1.075$ , which is the Participatory Project Initiation.

The linear regression model one therefore is indicated as;

Model 1:  $Y = f(X_1, \varepsilon)$ ,

$Y = \alpha + \beta_0 X_1 + \varepsilon$ .

Therefore,

$Y = 3.921 + 1.075 X_1$

Where,

Y = performance of mango farming projects,

$X_1$  = Participatory Project initiation.

The beta value of 3.921 inferred that, one unit increase in Participatory Project Initiation increased performance of mango farming projects by 3.921 and vice versa. The study confirmed that Participatory had an influence on the performance of mango farming projects in Makueni County, Kenya. Table 3 shows linear regression F-test relationship between the two variables Y and  $X_1$  had a correlation relationship of  $R^2 = .044$ , DF (2, 367) degrees of freedom and of F-test (12.23) and with a p-value of 0.000, meaning that the test was significant.

Table 3 shows improvement and enhancement mango farming projects through participatory project initiation measures. These findings are consistent with the views of Mbeche, Nyamwange, Magutu, & Onsongo, (2013) who argued that project start-up measures are important for the development of individual development projects and organizations. This is in line with (Bashir et al., 2013) who indicated that there was a low level of performance, policy commitment and practice during the launch phase. It was established that the relationship between initiation of projects and their performance during project initiation, is important to involve the whole community through participation on how they wanted the project to run and executed (Amadi, 2017). Further (Amadi, 2017) observed that, performance and success of the projects have a high relation to how they were initiated.

## 5. Conclusion

The study pointed out an important relationship between the participatory project initiation and the performance of mango farming projects in Makueni County, Kenya. Many mango farmers relied on word of mouth to say that planting mangoes rather than other crops provided a high return on investment. Word of mouth appeared to be the sole criterion for mango cultivation. Generally speaking, the mango market idea came later because they were not initially identified. The study revealed that there was no known developed local mango variety since all mango varieties were exotically developed. The differentiation of mango was missing from world markets because the varieties were similar to other varieties developed by foreign agricultural experts. Foreign mango breeders were not aware of the local environment and its climate or where they were to be planted around the world. And therefore the local mangoes bearing names of exotic mango nomenclature lacked great attractiveness of the world market. A parallel can be established that of the Indian variety Alphonso Mango, known as the king of the world's mangoes, is the specific variety of India and adapted to its climatic conditions. Makueni mangoes were found to be susceptible to many diseases and pest infestations and lacked specialized technical care to achieve an abundant mango harvest. Native/indigenous mango varieties did not even have a local market because of their high fibre content, making them unattractive to local consumers. Indigenous mango had very low prices and in some cases, many were given free of charge as bonuses to avoid waste. All cooperative movements of mangoes were still in their infancy and were not able to handle the threat of intermediaries. Although many farms were teeming with mango trees, they were unable to break even, but many were still hoping to benefit from subsequent mango fruit cycles. The study concludes that most of the issues could have been identified during the initiation phase of the project, as it addresses feasibility and viability issues prior to undertaking the planning and implementation phases.

## 6. Recommendation

Project initiation should always be carried out to depict the underlying problems which can be revealed by undertaking a feasibility study to show the viability status. This should involve agricultural extension workers and other technical teams of the government, as mango production has proven to be of a technical nature, from pre-harvest to post-harvest stages.

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