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

Charles KyaleKisumbi
Ph.D. Candidate, Department of Management Science and Project,
University of Nairobi, Kenya
Dr. Angeline Sabina Mulwa
Senior Lecturer, Department of Educational Management, Policy and Curriculum Studies,
University of Nairobi, Kenya
Dr. John MwauraMbugua
Senior Lecturer, Department of Educational Management, Policy and Curriculum Studies,
University of Nairobi, Kenya

Abstract:
The purpose of this article is to create awareness of the need for a robust mango policy and practice paradigm shift from traditional planning methods to participatory project planning, to enhance performance. It is based on an empirical scientific research for PhD thesis carried out in Makueni County Kenya, focusing on the influence of participatory project planning and performance of mango farming projects. Project Management theory formed the basis that guided the study, descriptive cross-sectional study design was used whilepragmatism research paradigm which uses mixed method approach was adopted. A sample of 375 respondents was selected from a population of 12,622 mango farmers using multistage sampling technique. Data was collected using both self-administered questionnaires and interview of 15 key informants. Both descriptive and inferential data analysis techniques were applied. Null hypothesis which stated that, there is no significant relationship between participatory project planning and performance of mango farming projects was tested through F-test and correlation. The findings showed that there existed a statistically significant correlation between the two variables at 95% confident levels with Df (2,367), F=2.402, t=1.469, p=0.000<0.05, r= 0.339 and R^2= 0.115. It was concluded that there was significant relationship between participatory project planning and performance of mango farming projects and the null hypothesis was rejected since it was not supported by the results. Based on the findings this article recommends that, in order to improve performance, participatory project planning considerations supported by an appropriate iterative combination of planning measures which are inherent along the project management life cycle.Participatory project planning should always be embraced in crafting of policy for optimal practice directions, to enhance performance.

Keywords: *Participatory project planning, project management life cycle, performance of mango projects, policy formulation and practice*

1. Introduction

The Study examined the influence of participatory project planning and performance of mango farming projects in Makueni County Kenya. The study also sought to establish the extent to which moderating influence of Environmental Factors and its relationships between participatory project planning and performance of mango farming projects. Mango fruit, which is the basis of this study, is basically grown in Makueni County for households' consumption, trade to increase income and as a means of unlocking other socio-economic development opportunities that improve on living standards. Mango farming projects are part and parcel of wider agricultural projects, as depicted in the case of FARM Africa funding mango improvement projects at the Kenyan Coastal region, to reduce extreme poverty levels (KARI, 2008). A study on mango value addition on group projects (Mbithe, 2012), alluded to such a need of mango implementing effective farming projects in Makueni County to reduce extreme poverty levels rife in rural setups. All mango farming projects in Makueni were planned and implemented on similar circumstances to mitigate and intervene on eradicating or alleviating the severity of pervasive poverty levels. In Haiti for instance, which is a developing country, mango production was taken up as an economic paradigm shift and as an opportunity for long-term economic growth and development, funded with the help

of Inter-American Development Bank Multilateral Investment Fund (MIF, 2010). Mangoes can become a feasible economic pillar as it is a huge economic pillar of Konkan Region of Maharashtra which drives economic growth and development in mango growing rural communities in India (Burondkar, Kulkarni, Salvi, Patil, Narangalkar, Joshi, Talathi, Naik, Malave, Bhosale, Deorukhakar, Bagade, Patil, Rane, Dodake, Haldankar and Bhattacharyya, 2018).

Although Makueni County became Kenya's top producer of mangoes, extemporaneous challenges emerged which needed to be addressed to improve to put mango performance on track. The goal of mango projects is to contribute in improving income growth opportunities for smallholder farmers and other participating meso-actors in the whole mango value addition chain.The primary benefit trickles down to the mango farmers, including processing and trading firms that spur sustainable mango performance (MIF, 2010). A study on small-scale production of agricultural projects in South Africa of stone fruits of peaches, apricots and nectarines showed that, the stone fruit projects failed due to lack of involving the real participatory actions of the fruit meso-actors (Hart, Burgess and Hart, 2005).*Ibid,*consequently, this affected the overall stone fruit production acumen, leading to poorly planned fruits projects that had shown to have continued in a project cycle life of their own, without following any clear project framework and direction to achieve the desired project outcomes to spur performance (Hart *et al*, 2005).

Poverty levels prevailing in the developing countries, especially in ASALs, can be reduced drastically to manageable levels through mango production since mangoes greatly supplement farmers' incomes and thrive well in hot temperate climatic conditions. Widespread poverties in Makueni mango zones are yet to be reduced to manageable levels, since they have remained among the highest in Kenya standing at (64%), when compared to the national absolute poverty level of 47% (MoALF, 2016). Even with multiplicity of concerted effort and multifaceted agricultural project approaches by national and county governments in combating pervasive poverty, poverty levels slightly dropped to 60.6%, meaning it was still very high in the entire Makueni County (KNBS, 2019). Meaningful economic ways of eradicating poverty levels have remained a mirage to grapple with for a long time, yet mango farms are seen teeming with many mango trees all over the county. A study on postharvest of mango farmers' choice of marketing channels revealed that mango farming projects were introduced in Makueni County to help in mitigating extreme poverties, brought about by the adverse effects of frequent droughts, rampant food shortages, unending food insecurity, occasioned by declining agricultural potential of most staple food crops (Muthini, 2015). A Report on India's mango production for global markets was shown to have had attained a global sustainable performance in becoming a key driver for rural economic growth and development (Burondkar*et al,* 2018). Mangoes, just like other crop husbandry subsistence foodstuffs are cultivated for sustenance, mitigation of poverty and hunger, food security measures, employment and income generation endeavours in rural areas. Distinctive agricultural pathways stated in the 2030 UN's 17 SDGs provided diverse ways of achieving lasting food security solutions, mostly experienced in developing countries where security is still dire (FAO, 2017).

On the global scene and in the African context, the emerging trends of transitive agriculturally-based economies calls for improved agriculturally-based project planning innovative measures, which should be strategically fit, so that they able to intervene and mitigate on the pervasive food insecurity. Well planned agricultural projects could offer food insecurity solutions, if primarily influenced the existential foundation of development in the turning of the fundamental wheel of human needs scale development, in the midst of dualistic economic disparities which are predominantly rife in developing nations (Max-Neef, 1991). In order to achieve a wholesomedevelopment latitude, this could be the fundamental prerequisite practice and policy of transforming the traditional agrarian societies to actualize their modernization processes, along the incremental stages of economic expansion path, to economically 'induce' and spur the developmental stages of economic growth (Rostow, 1960). This view, to a great extent is collaborated in a study which found out that, economic development structures had a direct significant influence on governments' stimulus on economic growth through capital establishment (Rumawir, 2019). In his human needs scale development, Manfred Max-Neef alluded that, limitations to development were brought about by scarcity of resources which are essential for turning the fundamental wheel of socio-economic development to alleviate 'poverty pathologies', felt most in rural populations in developing countries (Max-Neef, 1991).

Discrepancies in supply and demand on mango production and markets occurred due to concurrence of vicious uncertain issues that recur in the whole mango chain from year to year. Lack of proper planning in adopting good project management practices in mango production and lack of establishing robust mango cooperative trade movements predisposed mango production to losses which eventually affected performance (Ravishankar and Misra, 2010). In order to improve and increase mango production, indigenous mango tree rootstocks needed to be grafted to new cultivars and saplings to create new prolific cultigens not prone or susceptible to diseases and pests infestation. Through robust iterative planning endeavours, new breeds of mango varieties could be propagated to discover new prolific mango varieties which would be more resistant to frequent looming droughts and less prone to the effects of variability of climatic changes and global warming. In this, it behoves Makueni county agriculturists to research on new mango breeds that more resistant to drought, diseases and pest infestations. Most of mango varieties, if not all, are exotic propagated breeds which face similarity market challenges. In order to compete favourably in global markets, Makueni County should have its own researched indigenous mango varieties adapted fully to the local climate.

The idea of developing new mango varieties envisaged a continued improvement in mango production, which in turn would enhance performance of mangoes with higher prolificacy rate. The world has seen subsistence agriculture transformed and revolutionized through technology to increase mango production. This is why majority of mango trees flourishing and flowering in tropical regions amazingly have had many years of life longevity, but are still producing mango fruits to date (PIM, 2018). Participatory project planning for implementation of sound mango projects can improve performance to spur mango socio-economic growth and development. It is apparent therefore, that mere planting of mangoes for local and global markets is no longer enough to warrant income and bumper harvests since more is needed in

planning to improve performance. There as been erratic changes in global market environment which also affects managerial production aspects of mango farming projects. Participatory meso-actors in mango farming projects consists of individual farmers, mango buyers and sellers, government agricultural extension, global development partners, NGOs, agribusinesses and agricultural research stations, among others. These stakeholders endowed are with knowledge and technical skills able to drive mango performance in the right direction. There is need for concerted effort in planning to promote production in agriculture to improve sustainable food security and performance (Tesfaye, 2015).

Kenya's continued infrastructural development was envisaged to drive the country to a middle-economy status by 2030 (Kenya Vision 2030, 2008), which still may be on course in economic terms. Likewise and in the same direction, the global achievements to be attained, envisaged similar global economic trends on the developmental steady-state of nature's physiocratic invisible economic-hand, which is essential for growth along the economic expansion path as advanced in Harold-Domar economic model, among many others (Thong and Nguyen, 2019). Economic development and global partnerships puts more emphasis on UN 17 Sustainable Development Goals (SDGs), especially Goals 1 and 2, which deals with eradication of extreme poverty and hunger afflicting approximately one billion people globally (UN, 2015). The developmental taxonomy ideas visualized in the fundamental wheel of human needs scale development was rooted in rural community 'satisfiers' to identify 'wealths' and 'poverties' through self-reliance planning with autonomy by people and governments, so as to eradicate pervasive extreme poverties felt most in the decade of 1980semphasised in the Latin American Economic Crisis and Perplexities (Max-Neef, 1991). Planning concerns determining in advance of what needs to be done before implementation, and therefore, without planning, one has already unintentionally planned to fail. This makes the project planning phase paramount when enhancing mango performance.

1.1. Purpose of the Study

The purpose of the study was to investigate the influence of the participatory project planning and performance of mango farming projects in Makueni County Kenya.

1.2.Research Objective of the Study

The research objective of the study was to determine how participatory project planning influenced performance of mango farming projects in Makueni county Kenya.

1.3. Research Hypothesis Testing

In this study, the following research hypothesis (null) was tested:

- H_0: There is no significant relationship between participatory project planning and performance of mango farming projects in Makueni County Kenya.
- Alternative hypothesis:
- H_1: There is a significant relationship between participatory project planning and performance of mango farming projects in Makueni County Kenya.

1.4. Significance of the Study

The findings of the study were envisaged to offer tangible empirical evidence on Participatory Project Planning inenhancing Performance of Mango Farming Projects in Makueni County. The findings found out that the Mango tree is a key fundamental intervention project which can improve household income through robust participatory project planning as taught in the discipline of project planning and management. It anticipated to expand the existential steady-path of micro-economic growth factors, essential for driving the wheels socio-economic development in order to alleviate or eradicate the prevailing pervasive poverty levels, currently standing at 60.60% (KNBS, 2019). There were many mango meso-actors involved in mango value chain such as Makueni County Government, agricultural extension officers, mango micro-financing firms, and buyers, companies processing mango juices, various traders and exporters. Mango production can be improved significantly in collaboration with various mango stakeholders to check on the dearth of infrastructure and other institutional economic deficiencies experienced in the whole mango chain (Purushottam, 2015). The provided valuable information to various mango stakeholders, who will use the information to offer solutions to myriads of problems experienced in the whole mango value chain for practice and policy formulation.

The Mango fruit is a key contributor to the county's economic growth and socio-economic development in enhancing mango farmers' better living standards. Mango farming just like other cultivated foodstuffs, it is fundamental to achieving the Vision 2030 pillars driven by economic, political and social dimensions envisaged to make Kenya a middle economy earner (Kenya Vision 2030, 2008). The mango fruit takes time to mature from planting to harvest and can take between 4 to 7 years before the first harvest. This depends on the cultivars' types of mango indigenous trees, grafted mango trees, the quality of scion saplings and rootstocks available to the farmers during planting time. Mango production is important for enhancing socio-economic development, essential in vouching for satisficing strategies that offer pragmatic effort to improve people living standards. In spite of many long years of waiting, with unrecoverable hidden sunk costs, a lot could be achieved and quantified starting from pre-harvest planning of planting materials to postharvest stages to appraise numerically the 'steady-state' economic path for enhanced mango performance.

1.5. Statement of the Problem

The evolution of mango farming projects in Makueni commenced almost instantaneously due to the rising need for improving the indigenous mango varieties in the face of dwindling agricultural production, erratic rainfall patterns and looming pervasive poverty levels. Although Makueni County, over time became leader in mango production in Kenya, new

mango challenges emerged affecting overall mango performance in many farms. The challenges were experienced along the preharvest and postharvest phases due to lack of incorporating participatory project planning iterative activities to enhance performance. Mango diseases and pests' infestations did not seem to go way, thus affecting production, marketing and pricing of mangoes in the whole mango chain. Planning is paramount in checking failure of project performance. With the advent of Mango farming projects, seen in the same way as in FARM Africa funding mango improvement projects at the Kenyan Coastal region, were deemed to be feasible and viable for reducing extreme poverty and unlocking social-economic opportunities, including value addition (KARI, 2008; Mbithe, 2012). This notwithstanding, the local and global mango agribusiness awareness on alternative income generation, coupled with conducive climate for mango production, led to an exponential influx of more prolific exotic mango varieties in Makueni County. Mango fruit is a major socio-economic player in developing countries for providence of food sustenance, employment, essential jump-starting agro-industrial revolution to induce economically inspurring economic growth and development. However, there were numerous emerging impediments in spite of the mango fruit's increased production (Korir, Mutwiwa, Kituu and Sila, 2017). It has been reported further that a range 40-45% of mangoes were usually lost annually due postharvest handling challenges (Ambuko, 2019; Korir et al, 2017). In order to improve performance, planning is a key component (Storrs, 1949). In study on mangoes postharvest, it was reported that mango cultivation was riddled with many problems (Muthini, 2015).

Improved mango performance can only beachieved by implementing feasible and viable mango farming projects, along the preharvest to postharvest stages. In mango production, quality of mangoes can only be improved along the preharvest phases and definitely not in the later postharvest stages when damage has already been done.Middle-men menace was pointed out as one of the stumbling blocks in low pricing of mangoes besides dismal functioning of the respective nodal institutions concerned (Purushottam, 2015;Muthini, 2015)Nevertheless, better performance in mango production in quantity and quality can only be improved and maintained at preharvest production level, since it cannot be improved later along postharvest stages (Mathieu and Joas, 2007).Mango failure should be blamed on poor project planning. Mangoes wasted are not something new in Makueni, since most mango losses occurred along the preharvest spilling over into the postharvest stages. Unplanned preharvest factors influences postharvest pests such as mango fruit fly, besides other various diseases infesting mangoes, consequently affecting fruit quantity and quality in the overall performance (Rehman*et al*, 2015). Mango production in Makueni was affected by lack of well-planned mango policies, lack of involving expert support in planning, besides the effects of other emerging Socio-economic trends, funding, climate variability and middlemen menace offering low prices that did not even break-even on cost of production (Muthini, 2015; Purushottam, 2015; Choudhary*et al,* 2015). There were no serious mango marketing cooperative movements to offer modern production methods, leading to problems of collective bargaining in local and global markets. Further contemporary emerging issues raised were lack of mango skills, inadequate storage facilities, disorganized mango collection points, preharvest and postharvest losses(PHL)which ranged between 40 to 45 percent and reduced yields, thus affecting performance (Osena, 2011).

A study on mango postharvest challenges in Makueni County, recommended for a further research to be undertaken on 'opportunities and constraints' faced in mango production (Muthini, 2015).There were losses experienced in wilting and falling small unripe mangoes in preharvest mango production phases which spilled over as postharvest (PHL) losses, compounding production problems. Various studies have revealed that mango production was riddled with many problems of mangoes being prone and susceptible to numerous pests and diseases infestations, which accounted for 45% of mango postharvest losses, PHL (Ambuko, 2019; UN women, 2018; Korir*et al*, 2017; Muthini, 2015). It has been pointed out further that, limited access to good planting materials, devastating preharvest pests and diseases, postharvest losses, poor orchard management led to low returns, which affected mango performance in the long run (Oxfam, 2019).Mango statistics revealed a fluctuating and declining performance in the whole mango chain from preharvest and postharvest phases of production to market sales, year in, year out, for no apparent expert planning reasons. Performance of mangoes has seen yearly deferential declines and fluctuations in South-East Asia which in heydays contributed 77% of all mangoes produced globally, with the Indian sub-continent leading with increasing at a decreasing rates of 54%, 46%, 40%, 47%, whereby Kenya contributed 1.7% and 5% in total global mango production in different years (FSD Kenya 2015; HCDA, 2010; Tharanathan, Yashoda and Prabha 2006; Purushottam, 2015). It has also been revealed that 40-45% of mangoes were lost in postharvest phase making declines and fluctuations from year to year due to poor planning methods(Ambuko, 2019; Korir et al, 2017). Owing to these drawbacks, mango performance could be enhanced through participatory project planning iterative activities that alleviate most project impediments that affect overall performance.

2. Literature Review

2.1. Participatory Project Planning and Performance of Mango Farming Projects

Planning is a key component of the modern discipline of project planning and management, paramount in enhancing project performance. Without planning, a project is bound to fail since planning entails determining in advance on what to be done before it happens. On developing project activation schedules therefore, when the baseline foundation has been achieved, project initiation phase precedes project planning, which is the 2nd phase in project management life cycle, fundamental in planning for project's human and material resources. Planning is key to the overall performance of mango farming projects run by mango individual farmers including support from other intermediary mango meso-agencies. Project planning is the second phase of project management life cycle whereby, all the resources identified in project initiation are planned for implementation (Westland, 2008). Project planning is a *la prévoyance* case of a future foresight, looking forward to the optimal utilization of project resources just before the project implementation phase starts. Project planning comes first before all things and it is the best raison detretechnique for determining in advance on

what is to do before it is done, in people-centred developmentprojects.Without proper project planning everything would fail to achieve the projected objectives and expected goals (Amadi, 2017; Storrs, 1949). For instance, a study in Benin revealed that mango farmers should always anticipate and plan for unknown eventualities and uncertainties that can affect mango farm ecosystems; as exemplified in 22 species of ants (Hymenoptera: Formicidae) fauna found in mangoproduction (Taylor, Norbert Sinzogan, Adandonon, Kouagou, Bello, Wargui, Anato, Ouagoussounon, Houngbo, Tchibozo, Todjihounde and Jean-François, 2018).

If a mango farmer does not plan, mango farming project plans are bound to fail in projected performance. Participatory project planning is able to influence the performance of mango farming projects in different environmental setups and situations. For instance, the planning role of arboreal Oecophyllalonginoda (weaver ants), being a key method of conservative biological control activities, as they can be used against mango fruit flies promoted to mango growers; with this knowledge of the ant fauna of the remarkably poor in Benin,could be compared with the other countries in the sub-Saharan Africa as a prerequisite for planning intervention (Taylor *et al*, 2018). Project planning plays a major role in having robust implemented projects that lead to improved mango performance. Project planning entails considerations of all project resources as put forth by Turner (1999), who alluded that a project involves delivery of beneficial change, in qualitative and in quantitative terms. In this case, Participatory project planning attempts to bring together all concerned mango stakeholders to improve performance. The planning element in the Fayol's managerial functions is a key component of general management which is supposed to determine in advance on what is to be accomplished as advocated in the general industrial management theory (Storrs, 1949; Fayol, 1916). The general management function should not be confused with project management, although it is critical in achieving the expected outcome in the project implementation and its eventual performance. Mango production is usually affected by lack of planning for resources due to project constraints, technological complexities, output fluctuations, besides the level of commercialization driven by low technological influence and unsustainable institutional support (Sulistyowati and Natawidjaja, 2016).

Participatory project planning for commercialization is a very significant process of transforming from subsistence toward commercial agriculture, to improve price competitiveness for increased income through education and awareness of healthy living on consumption of the mango fruit (Sulistyowati, *et al*, 2016). Involvement of key stakeholders in planning and implementing mango projects provides directional evaluation of processes that increase mango production. A study in a mango growing community indicated some mango growers had actively started to conduct proper cultivation techniques which applied new technology to change sales orientation towards internationally planned markets (Sulistyowati*et al*, 2016). In project planning, monitoring and evaluation can be planned in advance on how it will be managed and executed in the identification of the most effective traps and lures that control mango stone weevil in mango orchards (Anderson, Tantoh, Akotsen-Mensah, Osei-Safo and AfrehNuamah, 2016). It behooves all the concerned stakeholders to agree on the best project planning processes that lead to proper utilization of scarce resources for combating mango rampant diseases and pests during preharvest and post-harvest phases. In developing countries, premature mangoes are usually affected by damaging pest infestations (Anderson *et al*, 2016). Individual mango farmers and other key mango actors including government extension officers, mango farmers could be empowered to improve mango production. Government's support in market planning, regulation and mango policy formulation and execution, is vital for continued collaboration between key stakeholders' participation, for improved planning for implementation (Mbeche et al, 2013; Aref, 2011). It is apparent that mangoes are prone and susceptible to various diseases and pests that need to be mitigated so as to increase mango production by individual farmers through sound planning procedures. Proper planning and monitoring and evaluation activities in mango farming is limited, thereby leaving several questions unanswered concerning the ecology and management practices of pests and diseases control measures (Anderson *et al*, 2016). Project planning is of major importance for future forecasting and understanding of mango production (Dessalegna, Habtemariam, Dersoc and Teferad, 2014). Even with advancement in managerial and technological skills, some challenges in mango farming are not yet known to this very day and recur from time to time (Dessalegna*et al*, 2014).

World over, mango fruit production planning plays a significant role in being the source of raw materials for manufacturing industries, in providing employment to youth who make the majority of world's growing population. Low quality of mangoes, can be addressed through other key mango varietal diversity, which needs to be introduced to achieve higher mango production (Dessalegna*et al*, 2014). It is important therefore, to plan and design mango farming projects that determine the expected production quantity and quality before implementation. Project planning designs should be thought of carefully so that the project plans are implementable without omitting details which force reviews of re-planning at later stages of the project management life cycle. It is important to involve stakeholders since they are the ones who have the technological expertise and managerial technical knowhow of sustaining the projects to the very end when project managers exit the projects on plan completion. Furthermore, agriculture has been reported to be the most important sector for any country's economic growth and development, essential for alleviating pervasive poverty experienced in rural communities and hence the need of robust project planning (Aref, 2011). Project managers, project sponsors, agricultural extension officers and development partners should come together to participate with mango farmers since they are key national planners for robust food production. Project stakeholders are key drivers in planning for project appraisals and managerial procedures in mango orchards. Capacity building and planning in agricultural sector reduces youth unemployment, reactivates and re-awakens agriculture potentials in youth empowerment programmes, such as in mango farming (Latopa, Norazizan and Rashid, 2015). Through project planning, capacity building identifies and plans for strategic fit mango production procedures that achieve food sufficiency for national consumption and surplus for export to earn foreign exchange. It has been revealed that the youth have a lot of synergies that can be tapped early to sustain performance of agriculture projects, for a long time (Latopa*et al*, 2015). Nevertheless and on short timelines, even on attaining robust programmes, a lot of training and mentorship is required to stabilize performance of mango to spur

socio-economic growth and development. In agriculture, there are inherent obstacles that affect agricultural empowerment programmes such as youth psychology, environmental factors,besides other farm input constraints (Latopa*et al*, 2015).

All projects require strong management skills to achieve successful planning and implementation. In their study (Pryor and Taneja, 2010), they found planning was a key component driving all managerial functions and the accompanying six organizational activities (technical, commercial, financial, security, accounting and management). Planning is futuristic in nature as well as forward looking in sense that, it aims at achieving the envisaged realities in projects before anything is done at all. It was also revealed that, there were many critics who reviled Fayol and disparaged his classical management functions and his 14 principles of management, but even so, he still had many scholarly followers who respected and revered him with same measure, on his general management planning concept that changed the world of development projects (Pryor *et al*, 2010).In his management functions process, Henri Fayol proposed 14 principles of management consisting of Division of Work, Authority, Discipline, Unity of Command, Unity of Direction, Subordination of Individual Interests, Remuneration, Centralization/decentralization, Scalar Chain, Order, Equity, Stability of Tenure, Initiative, Esprit de Corps, which promoted teamwork spirit and unity, including institutional management through the six key organizational activities (Fayol, 1916; Storrs, 1949; Pryor et al, 2010). The Fayol's six key General Industrial Management activities are composed of the Technical, Commercial, Financial, Security, Accounting and Management activity consisting of five functions which includes planning (Fayol, 1916). Mango projects should always be planned with a sense of accuracy as advocated by Henri Fayol method of planning. The Fayol's general management, the 6th activity is composed of prévoyance (Planning) forecasting in form of planning, organizing, staffing, directing/leading and controlling, which are considered to be the most important drivers of organizations in solving problems to achieve organizational goals and objectives (Fayol, 1916; Gulick et al, 1937;Pryor *et al*, 2010).

Planning is a managerial function which influences the raison detre main reason for existence of project organizations that meet societal expected needs in community and business obligations. In order to achieve robust success in developmental projects, the managerial function of planning should be interpolated with project managerial roles as postulated by Henry (Mintzberg, 1973). Projects organizations can achieve unprecedented success by incorporating the Mintzberg's ten Managerial Roles which comprises Interpersonal Roles, the figurehead, leader and liaison; Informational Roles, the monitor, disseminator and spokesperson, and Decisional Roles, the entrepreneurship expertise, disturbance handler on conflicts, resources allocator and negotiator, since they are key drivers of projects' planning and implementation (Mintzberg, 1973). The management functions are thought to be the best approach in having creative ways of solving project organizations problems to spur socio-economic growth and development in far flung rural communities. The concept of planning in organizations by use POSDCORD analogy in managerial overview and planning, is a concept of project management, and is used today in the study of project planning and management (Agrawal and Vashistha, 2013). Over time, the planning concept has been concretized further and adopted in many disciplines including project planning and management to form project planning, the 2nd phase in project management life cycle. Modern scholars and project managers have adopted planning as a futuristic prévoyance concept to address sound project planning iterative activity processes for individual and community projects. In any project, planning takes most of the 60% time more than all other the project iterative activities combined because many projects fail at the project planning phase or stage. The planning concept has also been addressed in the POSDCORD (planning, organising, and Staffing, directing, coordinating, reporting and budgeting) as revisited by (Gulick and Urwick, 1937; Pryor *et al*, 2010;Chalekian, 2013). Participatory project planning adopted in the study, is a key variable for finding its influence on the performance of mango farming projects in Makueni County, Kenya.

2.2. Theoretical Framework

The study made use of Project Management Theory, as it ubiquitously reinforced the planning concept and its bounding-assumptions in the project management life cycle (Warburton and Cioffi, 2014). A theory simply explains what the study phenomenon is and how it works within the theoretical framework, which is composed of such an important tool consisting of important basic features that are straightforward to the study (Torraco, 2004). On the forgoing, this study made of use other supporting theories, namely; Stakeholder Theory (Freeman, 1984), Ladder Citizen Participation (Arnstein, 1969), Theory of Constraints (Goldratt, 1990). The Citizen Participation Ladder Theory was relevant to the study as it vouched for empowerment techniques since planning is grounded in it as a ''community-based planning process'' which brings together various project stakeholders, the *''powerful (government or other nodal entities)''* and the ''*powerless (the community)''*, to participate amicably in planning of community development projects (Arnstein, 1969). The theory of constraints is important to study as it balances out mango project cost, time and scope, while stakeholder theory brings together various mango stakeholders to participate in mango production. The project management theory vouched for the study variable of participatory project planning.

2.3. Conceptual Framework

Conceptual framework is an explicit or implicit set of interrelated theoretical study concepts that show the underlying bounding confines and assumptions of the independent variable/s pointing to one dependent variable. It is also a complex formulation of knowledge, mental experiences interconnecting the theoretical framework theory on which the study is based; which basically entails conceptual framework being the operationalization of the theory into the study's dependent variable (Chinn and Kramer, 1999). In this, Conceptual Framework forms the heart of any study in being the very ultimate foundation of the study topic's; Research objectives, Research questions, Research Hypothesis, which thus dictates the direction of the literature review in forming the basis for pragmatism research paradigm in data collection techniques and data analysis tools and in the making of conclusions and recommendations, that impute generations and

inferences to the whole study population (Chinn *et al,* 1999).The principle guiding concepts, that is, the independent variable/s to one dependent, must be interrelated and interlinked in the conceptual framework organized in a manner that makes them easy to communicate the relationships to the study phenomenon (Chinn *et al,* 1999). Thus, the conceptual framework is normally summarized in a schematic diagram labelled clearly to show the relationships between the independent variables and one dependent variable, including the exogenous/endogenous moderating variable. In any study, independent variables are the cause of outcomes whether significant, insignificant or otherwise in statistical measures; while the dependent variable is the phenomenon under study. The conceptual framework is conceptualized by digging deeper into literature review for the theoretical framework which is explained in words narrative form from the suitable theories, for conceptualizing the independent variables that will be used to measure quantitatively or qualitatively the one dependent variable (Chinn *et al,* 1999).

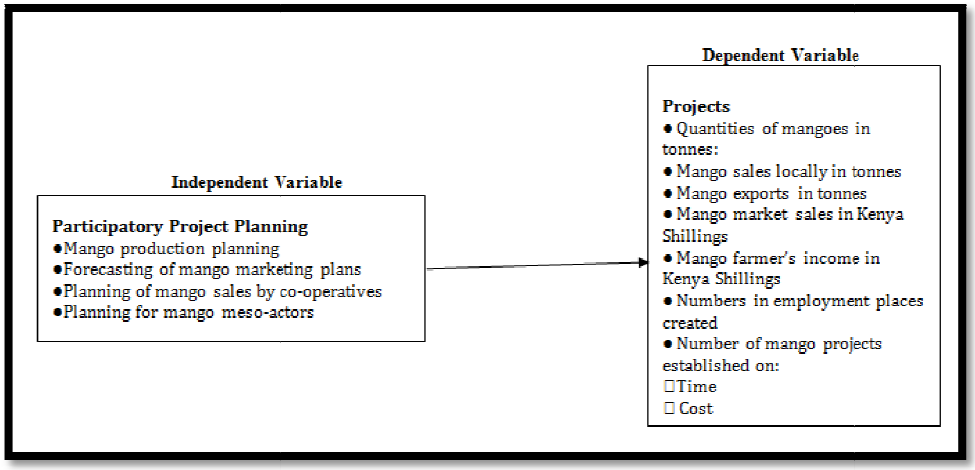

Figure 1: Conceptual Framework Diagram

Conceptual Framework for Participatory Project Planning and Performance of Mango Farming Projects in Makueni County, Kenya.

3. Research Methodology

3.1. Research Paradigm

Pragmatism research paradigm was used in the study as it allowed mixed method concurrent data collection and analysis in practical manner. The term Paradigm was originally coined for use in scientific research, from where it gained a scholarly momentum over time and further proposed and redefined as an effective worldview for guiding researchers to focus on one certain direction in a particular area (Kuhn, 1962).From this worldview therefore, pragmatism research paradigm combines positivism quantitative view and interpretivism or post-positivism view towards the ontological phenomenon under study. The principles of pragmatism research paradigm are based on the propositions that, researchers should use the philosophical and/or methodological approach that works best for a particular research problem statement, being investigated in an empirical way (Tashakkori and Teddlie, 1998).

3.2. Research Design

A research design is a structured blueprint or roadmap plan for conducting scientific research to answer the fundamental research problem. This study made use of a descriptive cross-sectional survey and correlational research designs. The descriptive cross-sectional survey it is a scientific plan for studying empirically the research problem involving collection of data by questionnaires, interviews and observations in order to learn people's beliefs or opinions at one point in time (Neuman, 2007). The correlational research design was important as it involved the measuring of two or more variables, independent and dependent, without the control of the researcher. The scientific purpose of this was to find out if there was a positive, zero or negative correlations in the testing of the research hypothesis. A research design is an effective planning strategy which is important in solving the problem statement under the constraints of time, cost and scope (Gakuu, Kidombo and Keiyoro, 2018).

3.3. Respondents

The target population of the study was 12,622 mango farmers out of which a sample of 375 respondents was determined by use of a table statistical formula (Krejcie and Morgan, 1970). Target population, is the population the researcher wished to generalize into the study findings while the study's accessible population referred to the study actual respondents who formed the sample size (Kyalo, Mulwa, Matula and Gichui, 2018). A pre-test pilot study was undertaken for the validity and reliability of the questionnaire before the main data exercise.

3.4. Data Collection

The data for this study was collected using self-administered questionnaires, observation and interview guides.

3.5. Data Analysis

Inferential statistical techniques and descriptive measures of central tendency and measures dispersion were used to present means and standard deviation, Analysis of variance (ANOVA) to describe spread and variation between the variables. The final number of questionnaires analysed were 369 out of the 375.Data was subjected to the test of multicollinearity and singularity, test of homoscedasticity (variance in scores on one predictor variable similarity to all the values of the other variables) and test of heteroscedasticity (variability of a predictor variable i.e. regressors, being unequal across the Cartesian scatter-plot range of values of the dependent variable i.e. regressand, that predicts it) using SPSS forLikert-type data.

3.6. Quantitative Data Analysis using Correlation Analysis and Regression Models

The research hypothesis was tested using correlation analysis, which entails no correlation;primarily, when t-test is at 0 point, F-test depicts null hypothesis. The regression models were on the amount of change the independent variable is associated with the changes on the dependent variable, when the two variable are tested. According to (Fisher, 1935), regression model is for findingout how best the goodness of fit in the gradient of the regression line and the amount of change and by how much, if any in a study. This is important because the null hypothesis is usually upheld valid first until it is disapproved or rejected. This means that, the result can be significant or not as in case the originally tested null hypothesis for the lady tasting (i.e. Dr. Blanche Muriel Bristol), who claimed could tell by tasting, if milk was put in tea first or not ((Fisher, 1935).In linear regression estimation model, the null hypotheses (H_0: $\mu = 0$) is based on a valid claims (which can never be proved! but can be disproved by use of random probabilities) in research and if not so, the researcher '*rejects or fails to reject'* the claim and *'accepts'* the alternative hypothesis ($H_{1:}$ $\mu \neq 0$).This is in tandem with original hypothesis formulated and tested on whether the p-value coefficient tells the changes are significant or not (Fisher, 1935).

3.7. Formulation of Null and Alternative Hypothesis

This research used inferential statistics to test the null hypothesis which stated that:

- H_0: There is no significant relationship between participatory project planning and performance of mango farming projects in Makueni County Kenya.
- H_1: There is a significant relationship between participatory project planning and performance of mango farming projects in Makueni County Kenya.

In this therefore, performance of mango farming projects is a function of*f* (participatory project planning) i.e.

$Y = \alpha + \beta_1 X_1 + \varepsilon$

Model: $Y = f(X_{2,} \varepsilon)$.

3.8. Ethical considerations

The researcher sought permission to undertake the study from the University of Nairobi, NACOSTI and the County Government of Makueni. All study information gathered from respondents were never divulged to third parties and was kept in strict confidentiality. Voluntary consent was obtained from the respondents and it was clearly explained that the study was for the academic purpose. In the course acquiring data information for the study, the respondents were never subjected to any form of harm that could have caused injury their right to privacy. Consent was obtained and voluntary participation was maintained. Confidentiality, informed consent and dignity of the respondents was highly respected. Transparency and honesty was also maintained at all times. Any kind of biasness was avoided so as to safeguard the anonymity of the respondents, their integrity and that of the data.

4. Results and Discussions

4.1. Introduction

The results consist of data analysis, interpretation, presentation and discussion of the research findings. It also presents analysis of tests for statistical assumptions and analysis of Likert-scale data. The study findings are organized into themes following the study objective. The purpose of the study was to establish the influence of Participatory Project Planning and Performance of Mango Farming Projects in Makueni County, Kenya. Key informants' qualitative data were analyzed by use of content analysis. The quantitative data in Likert Scale was analysed by descriptive and inferential statistics, means and F-tests, regression models and Pearson correlation was used for testing of the research hypothesis.

4.2. Respondent's Return Rate

The target population 375.Out of the 375 questionnaires, 369 questionnaires which was 98.4% of the total respondents were returned; a value considered adequate as described by (Richardson, 2005).In the event that some farmers were busy, arrangement was made to collect the filled questionnaires on a later date. The study also conducted face to face interview with 15 the key informants since they were on the ground to assist mango farmers in mango management and technical skills transfer.

4.3. Demographic Information and Respondents' Profile

The demographic information of the respondents was based on: gender, age bracket, academic level, occupation and the number of years of cultivating mangoes. The findings are as discussed below:

4.3.1. Distribution of Respondents by Gender

The gender distribution quantified frequency in percentage (%). The respondents were requested to indicate their gender and the responses presented in Table 4.1.

Gender	Frequency	Percentage (%)
Male	210	56.9
Female	159	43.1
Total	369	100

Table 1: Gender Distribution of Respondents

Table 1 shows majority of respondents, 210 (56.9%) were male and 159 (43.1%) female. This shows that more men were involved in Mango Farming Projects than female in Makueni County. This shows that more male respondents were involved in mango farming as opposed to female. These results agree with (Tesfaye, 2015) who argued that the women participation in farming was less than that of their male counterparts. This phenomenon could be explained on the impact of cultural beliefs concerning assets ownership in communities. However, this gender representation was very useful in this study as it could be assumed this disparity was attributed by land ownership tenure systems and community customary factors that remained static in most transitory economies. In another study, it was reported that, in most cases, women labour was considered passive in agriculture and it was neither observed nor quantified (Cisco and Olungah, 2016). They reported further that (Cisco *et al*, 2016) cultural norms and traditional beliefs excluded most women in the African, from direct land ownership.

Government's effort on gender equity and equality, and public participation anchored in new laws is seen to be reversing those negative tendencies (Kenya constitution, 2010). It was revealed on the need for concerted effort regarding women actual economic participation and public perception to overcome women invisibility in culture and gender roles through gender mainstreaming in agriculture, where mostly the woman labour is neither counted nor quantified (Ghosh *et al*, 2014). This tallies with a study which revealed that, social capital relationships in agricultural development projects opens up more farming ideas (TaruvingaNdou, Hlerema, Maraganedzha, Plooy and Venter, 2017). Tesfaye (2015) showed that, in the agriculture sector, women performed more work than men although it is believed that land belongs to men in the society. This view was supported by other authors who alluded that women farm-work was unpaid and undervalued for no convincing reasons (Tharani*et al*, 2016).

4.3.2. Distribution of Respondents by Age

Respondents were requested to indicate age. This indication established the age bracket and their age distribution. Table 2presents data on age.

Age in Years	Frequency	Percentage (%)
Below 18	3	0.8
18–20	5	1.4
21-30	15	4.1
31-40	90	24.3
41-50	156	42.3
51 years and above	100	27.1
Total	369	100

Table 2: Distribution of Respondents' Age

Table 2, shows majority 156(42.3%) of the respondents were aged between 41-50 years. This was followed by those who were 51 years and above 100(27.1%) and 31- 40 (24.3%) and below 18 years were only 3 (0.8%). This showed that most of those farming mangoes were above 31 years and made up of 93.7%, hence were in a position to take good care of their mango farms. The young people were the minority of the people involved in mango farming, making only 23(6.3%) of the respondents. This agrees with (Tharanathan et al, 2006) who argued majority farming were adults, not youth. Nevertheless, (Latopa, Norazizan and Rashid, 2015), reported that youth unemployment could be reduced through capacity building in agriculture to reactivate and reawaken youth potential in agricultural empowerment programmes. This study found out that those below 18 years were only 3 (0.8%) in school or college, and those out of college were still under directions of adults who owned the land where mangoes were cultivated.

4.3.3. Distribution of Respondents the Highest Academic Qualification

Respondents were requested to indicate academic qualification. This meant establishing the mango farmer's ability to acquire mango farming skills and technical knowhow. Table 3presents the results.

Academic	Frequency	Percentage (%)
Never went to school	10	2.7
Primary	91	24.7
Secondary school	202	54.7
Certificate	41	11.1
Diploma	10	2.7
Degree	8	2.2
Masters	4	1.1
PhD	3	0. 8
Total	369	100

Table 3: Academic Qualifications of Respondents

Table 3results shows majority 202(54.7%) had secondary education as their highest level. findings of (Tharani, *et al*, 2016) argued enhanced participation in Agriculture required at least secondary education. Those who had primary education were 91(24.7%). It was also noted that very few mango farmers had Post-Secondary Education with 10(2.7%) diplomas, 4 (1.1%) and 3(0.8%) with PhDs. This implies that most of the respondents were learned, hence could manage their mangoes farms better.

4.3.4. Distribution of Respondents by other Occupation

The study sought to establish other occupations apart from mango farming. This information was important to know whether the mango farmers had other sources of income to assist them in financing their mango projects. Table 4 presents results.

Occupation	Frequency	Percentage (%)
Self-employed	232	62.9
Full-time employment	38	10.3
Temporary employment	42	11.4
Student	10	2.7
Retired	47	12.7
Total	369	100

Table 4: Distribution of Respondents' Other Occupation

Majority 232(62.9%) were self-employed. This means that they were likely to finance and have enough time to take care of their mango projects. This was followed by 47(12.7%) who were retired and had started mango farming. It was noticed that only a few farmers 42(11.4%) and 10(2.7%) had temporary employment and others students respectively.

4.3.5. Distribution of Respondents by Number of Years in Mango Farming

The study sought to establish the number of years the respondents were involved in mango farming projects. Establishing the experience of the farmers was important in this study since experienced farmers were likely to provide reliable information for this study. The responses were presented in Table 5.

Experience in Years	Frequency	Percentage (%)
1-5	10	2.7
6-10	122	33.1
11-15	170	46.1
16-20	41	11.1
21-25	10	2.7
25-30	12	3.2
31 and above	4	1.1
Total	369	100

Table 5: Distribution of Respondents' Number of Years in Mango Farming

This study established majority 170(46.1%) had been doing mango farming for 11-15 years. This was followed by 122(43.1%) who had been doing mango farming for 5-10 years. It was noted that, very few mango farmers had been in mango farming for between 21 and above 31 years making a total of only 18.1%. Also very few had 1-5 years' experience 10(2.7%). These results showed that the respondents had good experience and were likely to provide reliable information.

5. Participatory Project Planning and Performance of Mango Farming Projects

5.1. Descriptive and Inferential Statistical Analysis

The results of the Descriptive and Inferential Statistical Analyses were done on Participatory project planning and performance of mango farming projects. Likert-scale type of questions were used in this study ranging from 1-5 differentiated as Likert item wherein, a single item was used to measure a single variable and Likert Scale (Brown, 2011).

Ibid, Brown argued that, Likert scale data can be analysed as an interval measurement scale in all descriptive and statistical data analyses. These scales were created by this researcher and involved calculating a composite score (sum or mean) from Likert type items data. The composite score for the Likert scales were analysed as an interval measurement scale after which various data analysis procedures for interval scale items were applied. According to (Carifio and Racco, 2007), when using 5 point Likert-scale, the following are the scoring; strongly Agree *(SA) 4.2<SA<5.0,* Agree; *3.4<A<4.*2, Neutral; *2.6<N<3.4,* Disagree*; 1.8<D<2.*6, Strongly Disagree; *1<SD<1.8.* The scale gives an equidistance of 0.8 within the range of measurements. This weighting criterion was followed in data analysis of Likert-Scale type of data in this study. These scales were used successfully by (Obare, Kyalo and Mulwa, 2016).

The descriptive analysis of the study sought to determine on how participatory project planning influenced performance of mango farming projects in Makueni county Kenya. To achieve this objective, descriptive and inferential statistics were used. To measure how participatory project planning influenced performance of mango farming projects, the following indicators were used; mango production planning and forecasting of mango marketing plans. Twelve (12) Likert scale items were presented to the respondents and they were requested to indicate their level of agreement with the given statement on a scale of 1 to 5 with, SD= strongly disagree, D= disagree, N= neutral, A= agree and SA= strongly agree. The results in Table 4 shows all the descriptive analysis details.

5.1.1. Descriptive Analysis of Likert-Type Data

Descriptive Analysis of Likert-Type data on Participatory Project Planning and performance of mango farming projects is depicted in Table 6, in detail:

No.	Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SD
13a	There are continuous participatory planning before actual planting of mango seedlings	51 (13.8)	96 (26.0)	88 (23.8)	59 (16.0)	75 (20.3)	3.03	2.82
13b	seminars for transferring information to mango farmers to increase production are not conducted	42 (11.4)	55 (15.0)	96 (26.0)	100 (27.1)	93 (25.2)	3.5	3.19
13c	Participatory planning is done for prolific seedlings that can increase mango production	33 (8.9)	51 (13.8)	112 (30.4)	95 (25.7)	78 (21.1)	3.4	4.05
13d	There are not government implementation and regulatory plans in mango farming	77 (20.9)	123 (33.3)	98 (26.6)	31 (8.4)	30 (8.1)	2.4	4.37
13e	Mango farmers are trained to be effective in use agrochemicals for prevention of mango pests	164 (44.4)	99 (26.8)	12 (3.3)	64 (17.3)	30 (8.1)	2.9	4.41
13f	There are no working plans for funding mango farmers to increase mango output	26 (7.0)	26 (7.0)	50 (13.6)	79 (21.4)	183 (50.7)	3.9	5.48
13g	There are various mango actors in your area who assist mango farmers in cash and in kind	100 (27.1)	125 (33.9)	60 (16.3)	50 (13.6)	34 (9.2)	2.4	5.50
13h	The county government agricultural extension officers are not always available to mango farmers	102 (27.6)	79 (21.4)	23 (6.2)	99 (26.8)	66 (17.9)	3.3	5.67
13i	You plan well in advance to control the onset of diseases and pests before they infest mangoes	10 (2.7)	15 (4.1)	79 (21.4)	135 (36.6)	130 (35.2)	4.0	6.39
13j	You plan well in advance for use of quality mango seedlings and rootstocks	12 (3.3)	20 (5.4)	81 (22)	120 (32.5)	136 (36.9)	3.9	6.3
13k	You have already planned market channels to sell your mangoes	59 (16.0)	84 (22.8)	76 (20.6)	100 (27.1)	50 (13.5)	3.0	6.58
13l	Mango farming inputs are not expensive to most farmers	11 (3.0)	17 (4.6)	74 (20.1)	137 (37.1)	130 (35.2)	4.1	7.19
	Composite mean and standard deviation						3.25	5.16
	n=369 Composite mean =3.25 Composite standard deviation=5.16 Cronbach's Alpha (a) Reliability coefficient =0.851							

Table 6: Participatory Project Planning

Table 4.14 revealed composite mean (M) for the performance of mango farming projects was 3.25 and the standard deviation was 5.16. The Cronbach's Alpha (a) Reliability coefficient used to measure performance of mango farming projects was 0.851. This showed that the items had very strong internal consistency.

Item 13a required respondents' opinion on the statement that, there were continuous participatory planning before actual planting of mango seedlings. Results showed 26% they disagreed, while 23.8% were neutral. The item had mean of 3.03 and SD of 2.82 indicating they s were neutral. The mean was less than the composite mean implying that the participatory project planning before actual planting had no influence on the performance of mango projects. Further item 13b sought to determine opinion of the respondents on the statement that, seminars for transferring information to mango farmers to increase production were not conducted. The results indicated that 27.1% agreed while 26% were neutral. The item had mean of 3.5 and SD of 3.19 indicating that the respondents being neutral. The mean was more than the composite mean implying that the seminars for transferring information to mango farmers had influence on the performance of mango projects. These results agree with the key informants' report which indicated that seminars were good because they helped farmers to gain new knowledge leading to improved performance. The same results were echoed by one farmer during the interview who said that;

'We have never seen anyone coming to train us on mango production, so we only depend on information from friends which sometimes is very scanty and misleading'.

These findings were in agreement with (Arinloye*et al*, 2017) seminars and training in agriculture and found out that, lack of adequate seminars and training affected agriculture in the initial stages. This in turn led to preharvest problems and poor handling in post-harvesting of mangoes, compromising quality in local and global markets. It also led to losses and lower prices in the long run, thus predisposing mango production to many financial constraints in whole mango value chain development. One of the mango farmers on the same issue said that;

''Mango Farmers need financial assistance during the planning of their mango projects since farm inputs and seedlings are very expensive to afford by most farmers''

Item 13c sought to determine opinion of the respondents on the statement that, participatory project planning is done for prolific seedlings that can increase mango production. The results indicated that 30.4% of the respondents were neutral about the statement while 25.7% agreed. The item had mean of 3.4 and SD of 4.05 indicating neutral about the statement. The mean was slightly more than the composite mean implying the item had some influence on performance. Further, item 13d sought to determine opinion on the statement that, there are no government implementation and regulatory plans in mango farming. Results indicate 33.3% respondents disagreed while 26.6% were neutral. The item had mean of 2.4 and SD of 4.37 showing respondents disagreed. The mean was less than the composite mean implying government implementation and regulatory plans in mango farming had no influence on the performance of mango projects. These results are in line with what the respondents who said;

'We do not know the importance of the government implementation and regulatory plans in mango farming if at all they are there in existence'.

The key informants also indicated that, although government implementation and policy regulatory plans in mango farming were there, little has been done in Makueni County. The results also agree with Turner (1999), who argued that, though project planning plays a major role in having well implemented projects. Most Governments do very little that lead to improved performance of mango farming projects. Project planning entails considerations of all project resources. Mbeche et al, (2013) revealed that planning for implementation led to sound executed projects.

Item 13f sought to determine opinion of the respondents on the statement that, there were no working plans for funding mango farmers to increase mango output. Results indicated majority (50.7%) strongly agreed with the statement while 13.6% were neutral. The item had mean of 3.9 and SD of 4.41 indicating that they agreed with the statement. This mean was more than the composite mean implying funding mango farmers had influence on the performance of mango projects. These results agree with what the key informants who indicated that mango farming required a lot of funds although the government was not financing mango famers well. Also one of the farmers said;

'We just hear that there are people funded by the government to do mango farming but there seems to be no working plans for funding mango farmers to increase mango output'.

Item 13g determined opinion of the respondents on the statement that, there were various mango statement while 16.3% were neutral. The item had a mean of 2.4 and standard deviation (SD) of 3.2 indicating that the respondents were neutral about the statement. These results were however not in line with a mango farmer who said,

'There were very few mango actors in our area who assist mango farmers in cash and in kind and very few people have benefited from the same.'

Item 13h sought to determine opinion of the respondents on the statement that, the county government agricultural extension officers are not always available to mango farmers. The results indicated that 27.6%) disagreed and 26.8% agreed. The item had mean of 3.3 and SD of 3.7 indicating that the respondents were neutral about the statement. This mean was less than the composite mean implying item had influence on mango projects. Item 13i sought to determine opinion of the respondents on the statement that, they plan well in advance to control the onset of diseases and pests before they infest mangoes are not government implementation and regulatory plans in mango farming. Results indicated 36.6% agreed with the statement while 35.2% strongly agreed. The item had mean of 3.2 and SD of 4.1 indicating they were neutral about the statement. Item 13j sought to determine opinion of the respondents on the statement that, they planned well in advance for use of quality mango seedlings and rootstocks. The results indicated 36.9 % of strongly agreed while 32.5% strongly agreed. The item had mean of 3.9 and SD of 3.3 indicating respondents were in agreement with the statement.

Item 13k sought to determine opinion of the respondents on the statement that, they had already planned market channels to sell their mangoes. Results indicated 27 % agreed with the statement while 20.6% were neutral. The item had mean of 3.0 and SD of 3.8 indicating were neutral about it. Item 13l sought to determine opinion of the respondents on the

statement that, mango farming inputs were not expensive to most farmers. The results indicated 37.1% agreed with the statement while 35.2% strongly agreed. The item had mean of 4.1 and SD of 3.9 indicating agreement with the statement.

5.1.2.Hypothesis Testing

The null and the alternative were set because, according (Fisher, 1935; Fisher, 1925) in hypothesis testing, H_0 andH_1 for rejecting or failing to reject criterion; the rejection criterion in any study as put forth in his study book for Statistical Methods for research Workers. Null hypothesis is the one that is tested, ***ibid***, according Ronald Aylmer Fisher. And hence, the research null hypothesis was tested this study:

- H_0: There is no significant relationship between participatory project planning and performance of mango farming projects in Makueni County Kenya.
- H_1: There is a significant relationship between participatory project planning and performance of mango farming projects in Makueni County Kenya.

In this study, the hypothesis stated in the null and alternative in order to reject or fail to reject in comparison to the comparative analogy advanced by (Fisher, 1935).

Linear Regression Model:Performance of Mango Farming Projects being the dependent variable is a function of ***f***(participatory project planning variable), and hence the linear regression model:

$Y = f(X_1, X_2, \varepsilon)$,

$Y = \alpha + \beta_0 X_1 + \beta_1 X_2 + \varepsilon$,

$Y = \alpha + \beta_0 X_2 + \varepsilon$,

Model: $Y = f(X_{2,} \varepsilon)$.

5.1.3. Relationship between Participatory Project planning and Performance of Mango Farming Projects

Pearson's moment correlation technique was used to determine the relationship between Participatory Project planning and Performance of Mango Farming Projects. The results are in Table 7 below.

		Participatory Project Planning	**Performance of Mango Farming Projects**
Participatory Project planning	Pearson Correlation	1	.522(**)
	Sig. (2-tailed)		.000
	N	369	369
Performance of Mango Farming Projects	Pearson Correlation	.522(**)	1
	Sig. (2-tailed)	.000	
	N	369	369

Table 7: Correlation between Participatory Project Planning and Performance of Mango Farming Projects
*** Correlation is significant at the 0.01 level (2-tailed)*

The Table 7 Results shows that, there was a significant positive relationship between Participatory Project Planning and Performance of Mango Farming Projects depicting (r=0.522, p=0.000). This infers that there was a strong association between Participatory Project planning and Performance of Mango Farming Projects.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.339(a)	0.115	0.067	0.213		
ANOVA (b)						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.218	2	0.109	2.402	.000(a)
	Residual	1.682	367	0.045		
	Total	1.9	369			
Coefficients (a)						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	0.881	0.098		9.016	0
	Participatory Project planning (X_2)	0.095	0.065	0.541	1.469	0

Table 8: Simple Linear Regression Results for the Association between Participatory Project Planning and Performance of Mango Farming Projects
a. Dependent Variable: Performance of Mango Farming Projects
b. Predictor Variable:Participatory Project Planning

The results from Table 8 shows that, DF (2,367) F=2.402, t=1.469 with level of significance P=0.000<0.05, r= 0.339 and R square= 0.115. The results signified that 5% level significance and 95% level of significance the test statistically significant and therefore, the null hypothesis was rejected.

Table 4.16 Results depicts adjusted R squared is 0.067 which infers 6.7% of the variations in performance of mango farming projects were influenced by Participatory Project planning, while the other variations are determined by other factors outside the model. Again, the ANOVA results indicated that the model was statistically significant, F (2,367) =2.402 with a p-value = 0.000. In fitting the best fit of least squares method as illustrated on Table 8, the researcher obtained the model Y= a (constant) + BX (beta denotes the gradient amount of change of independent variable had on dependent); this is where a = 0.881, b = 9.016 and X = 0.095, which is the Participatory Project Planning.

The linear regression model one therefore is indicated as;

Model 2: $Y = f(X_2, \varepsilon)$,

$Y = \alpha + \beta_0 X_2 + \varepsilon$.

The univariate linear regression model is;

$Y= 0.881 + 0.095X_2$

Where,

Y = performance of mango farmers and

X_2= Participatory Project planning

The beta values of 0.095 infers that, one unit increase in Participatory Project planning increased performance of mango farming projects by 0.095 units and vice versa. This confirms that Participatory Project planning had significant influence on performance of mango farming projects. It could also be seen from Table 8 that, the linear regression F-test relationship between the two variables Y and X_2 had a correlation relationship of R^2=0.115, DF (2, 367) degrees of freedom and of F-test (2.402) and with a p-value of .000; meaning that the test was significant. With the null hypothesis $H0_1$ rejected it was concluded further there was a significant relationship between the Participatory Project planning in the overall Performance of mango Projects.

On Project planning has been shown that, planning for implementation was important as it improved project success and quality (Mbeche et al, 2013). It was reported by Aref (2011), that participation in agricultural planning was important in farming community. This tallies with a study by (Pryor and Taneja, 2010), found out that in the theory management, Planning was a key component which entailed success of projects. Chalekian (2013) in his revising of POSDCORD analogy of 1937, demonstrated the importance of project planning. This implied that participatory project planning is needed to enhance mango production.

6. Conclusion

The studyfound that, there was a significant relationship between participatory project planning and performance of mango farming projects in Makueni County, Kenya.Mango farmers should always have detailed planning in place before starting their mango farming projects. From the interviews conducted and from the key informants, there should always be continuous participatory project planning processes before actual planting of mango seedlings in the mango orchards. The study concluded that, mango farming projects should consider comprehensive participatory project planning before engaging in mangoes farming projects to enhance mango performance.

7. Recommendation

The recommendation is on planning for practice, policy formulation and its execution. Robust planning practices are able to enhance performance of the mango fruit. From literature and the findings of this study, it was clear that the mango fruit being the basis of this study, was basically grown for households' consumption and trade, to increase income as well as means of unlocking other socio-economic development opportunities, which improve on rural community living standards. Through participatory project planning, performance of the mango fruit can be improved. From literature, it is evident that, the mango sector has many stakeholders; governments, buyers, financers and project managers, mango farmers, including many other interested parties and meso-actors in whole mango agribusiness value chain. Unfortunately, the national policy and legislative framework have not prioritized the mango fruit as of sound economic value, requiring robust agricultural agribusiness venture when addressing environmental degradation problems in the ASALs,since it is important in enhancing mango performance and controlling of climate change and global warming in mango growing Zones.

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