Determinants of the Performance of Mortgage-Financed Construction Projects in Kenya: A Literature Review Perspective

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Abstract

Mortgage-financed construction projects in Kenya have been associated with dismal performance. These projects have been riddled with cost and schedule overruns, among other challenges. This paper aimed to establish the factors determining the performance of mortgage-financed construction projects. A desk review approach was adopted whereby previous research published between the years 2000 and 2022 on the subject area was considered in the analysis. In total, 63 studies were reviewed. However, data was collected from a total of 17 studies. Some of the reasons why 46 studies were not considered were due to duplication of findings, lack of a clear method of data collection and analysis, and limited geographical scope, among other reasons. Based on the reviewed studies, the research established a total of 61 individual factors after excluding all repetitions. These were categorized into ten groups namely; Procurement-Related Factors (X1), Project-Related Factors (X2), Client-Related Factors (X3), Consultant-Related Factors (X4), Project Management-Related Factors (X5), Contractor-Related Factors (X6), Resource-Related Factors (X7), Financial-Related Factors (X8), Contract Management-Related Factors (X9), and External Factors (X10). Further, the study determined the presence of a moderating variable that affects the effect of these critical success factors on the performance of mortgage-financed construction projects. This moderating variable is Mortgage Financing (Z). The study concluded that the investigated factors were critical for the success of mortgage-financed construction projects and recommended an empirical study to be conducted in Kenya to evaluate the strength and effect of these determinants on the performance of mortgage-financed construction projects.

Keywords: *Construction Project Performance, Determinants, Factors, Mortgage Finance*

Introduction

Mortgage-financed construction projects in Kenya (MFCPs) have been associated with dismal performance due to challenges such as cost and schedule overruns, among others. This has been reported in numerous studies (Kuria, 2019; Muthuri & Tumuti, 2019; Ndavi, 2019; and Onchoke, 2012). According to Musyoka et al. (2017), schedule and cost overruns have been the norm rather than the exception. Malala (2015), found out that 88% of projects in the Kikuyu constituency suffered delays, 12% of the projects were on time, while no project (0%) was ahead of schedule. Mue (2015) reported schedule overruns of 33.3%. According to Ongòndo et al. (2019), on average, 35-73% of construction projects in Kenya overrun their schedule. In another study, Lukale (2018) reported cost overruns of up to 24.92%. There is also further evidence that the time and cost performance of projects is to the extent that over 70% of projects initiated are likely to escalate with time by more than 50% and over 50% of projects are likely to escalate in cost by more than 20% (Nyangilo, 2012).

Amid this dismal performance, however, the determinants of the performance of MFCPs in Kenya have not been investigated. Previous studies on the factors influencing construction project performance have failed to address the aspect of project finance specifically mortgage, which is the most common method of debt-financing adopted by developers. Further, studies conducted on mortgage financing here in Kenya have been from the perspective of the lending institutions rather than the project (Abdulrehman & Nyamute, 2018; Asabere et al., 2016; Luvuga & Ngari, 2019; Mang'era, 2014; Musyoka et al., 2017; Mwendwa, 2015; Ongòndo et al., 2019). The aim of this paper therefore was to establish the factors determining the performance of MFCPs.

Methodology

A desk review approach was adopted whereby previous research published between the years 2000 and 2022 on the subject area was considered in the analysis as shown in Figure 1. In total, 63 studies were reviewed. However, data was collected from a total of 17 studies. Some of the reasons why 46 studies were not considered due to duplication of findings, lack of a clear method of data collection and analysis, and limited geographical scope, among other reasons. Based on the reviewed studies, the research established a total of 61 individual factors after excluding all repetitions. These were categorized into ten groups namely, Procurement-Related Factors (X_1), Project-Related Factors (X_2), Client-Related Factors (X_3), Consultant-Related Factors (X_4), Project Management-Related Factors (X_5), Contractor-Related Factors (X_6), Resource-Related Factors (X_7), Financial-Related Factors (X_8), Contract Management-Related Factors (X_9), and External Factors (X_{10}). Further, the study determined the presence of a moderating variable that affects the effect of these determinants on the performance of mortgage-financed construction projects. This moderating variable is Mortgage Financing (Z).

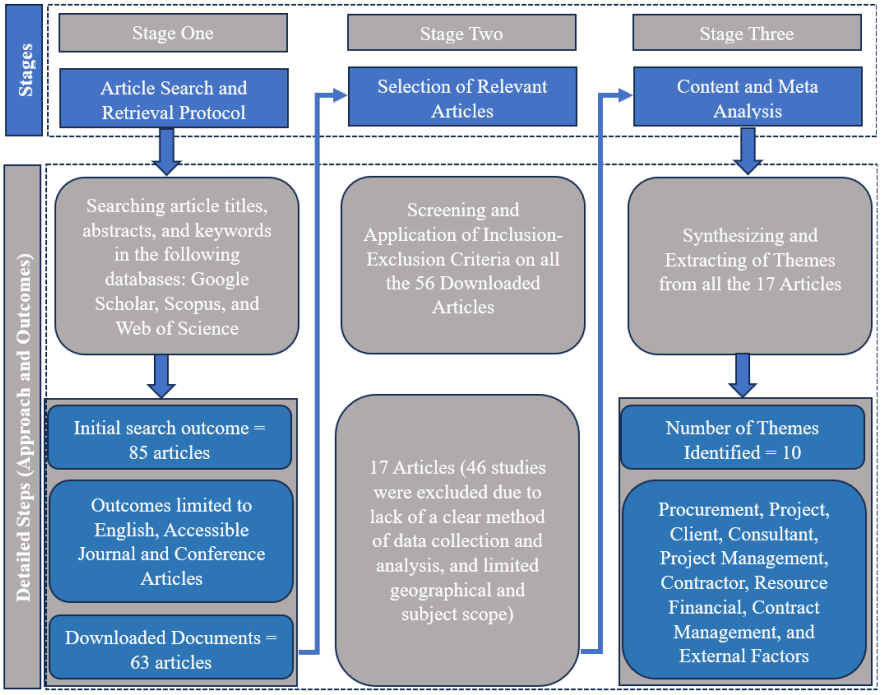


Figure 1: Methodological Framework

Source: (Author, 2025)

Findings

Factors Affecting the Performance of MFCPs

The distinction between self-financing and mortgage-financing in construction projects is in the nature of cashflow. The former has a relatively more control by the client while the latter has external factors coming into play. The financier in MFCPs has an extent of control beyond the reach of the client.

Procurement-Related Factors

The mode of procurement of the construction project plays a part in determining the performance of the project. Though Didenko and Konovets (2008) point out that most authors however do not appear to acknowledge procurement as a project success component, they only considered two aspects of procurement in their study; purchasing, tendering. According to Das and Ngacho (2017), in order to guarantee a project's success, supply chain-related factors attempt to capture the availability of project resources, such as labour, equipment, and materials at the appropriate time and location. Table 1 presents a summary of the procurement-related factors, their sources, and their frequencies.

Table 1: Procurement-Related Factors

	Procurement-Related Factors	References	Frequency
a)	Appropriateness of the procurement method used to select the contractor	(Ahmed, 2023; Ngacho & Das, 2015; Didenko & Konovets, 2008)	3
b)	Appropriateness of the procurement method used to select the subcontractors	(Ahmed, 2023; Ngacho & Das, 2015; Didenko & Konovets, 2008)	3

c)	Effectiveness of the criteria used for selecting suppliers	(Ahmed, 2023; Ngacho & Das, 2015)	2
d)	Timeliness of the procurement processes	(Ahmed, 2023; Ngacho & Das, 2015)	2

Project-Related Factors

The type of project, its size and scope are important factors which have an effect on how the project is executed. Didenko and Konovets (2008) lists the project-related factors as; type of the project, project scope and size, clear objectives of project. Das and Ngacho (2017) and Nguyen and Watanabe (2017) add project nature and complexity on this list. Gudienė et al. (2013) further includes project value, goals and risk to the list. Babalola et al. (2015) established these factors as; type of project, nature of project, complexity of project, size of project, and appropriateness of the completion period given for the contract. Musarat and Ahad (2016) provided an almost similar list but also included project planning, materials and equipment, supervision, project uniqueness, construction methods, project's profitability, and adequate funds/resources. Kazaz et al. (2012) provide an almost entirely different list; nature of construction methods, extent of feasibility studies, project scale, extent of maintenance of works, materials, and equipment, and nature of construction methods used. Table 2 presents a summary of the project-related factors, their sources, and their frequencies.

Table 2: Project-Related Factors

	Project-Related Factors	**References**	**Frequency**
a)	Effectiveness of the project team in handling the project's complexity	(Das & Ngacho, 2017; Nguyen & Watanabe, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Kazaz et al. 2012; Didenko and Konovets 2008)	7
b)	Effectiveness of the project team in handling the project's size and scope	(Das & Ngacho, 2017; Nguyen & Watanabe, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Kazaz et al. 2012)	6
c)	Adequate previous similar experience	(Das & Ngacho, 2017; Nguyen & Watanabe, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Kazaz et al. 2012)	6
d)	Definition of the project objectives	(Das & Ngacho, 2017; Nguyen & Watanabe, 2017; Musarat & Ahad, 2016; Gudienė et al. 2013; Kazaz et al. 2012)	4
e)	Adequacy of the project's completion period	(Das & Ngacho, 2017; Nguyen & Watanabe, 2017; Musarat & Ahad, 2016; Gudienė et al. 2013; Kazaz et al. 2012)	4

Client-Related Factors

Clients are the initiators of projects and the eventual beneficiaries of the project. Musarat and Ahad (2016) highlighted the following client-related factors as determinants of construction project performance; client experience, client type (public/private), client size, client's influence, ability to make timely decision, clear & precise goals, client's ability to participate in different phases of project, client's claim risk attitude. Kazaz et al. (2012) only lists two client-related factors namely management faults, and bureaucracy. Aibinu and Jagboro (2002) established the following factors; finance and payment of completed work, slow decision-making by clients, client interference, and unrealistic imposed contract duration. Gudienė et al.

(2013) on the other hand listed the following; client's experience, size, type (private or public), ability to make timely decisions, influence, risk attitude, clear and precise goals, and the ability to participate in different phases of the project. Babalola et al. (2015) established a very detailed list comprising of the following; client's experience whether he is a sophisticated or specialized client, size of client's organization, client's emphasis on low construction cost, client's emphasis on quick construction instead of quality, client's ability to make project decisions, client's ability to brief the project objectives, client's interference during construction, and delay of progress payment to contractors.

Client-related factor represents the client's level of experience in handling projects of a similar kind, ability to arrange finances, ability to get approvals on time, emphasis on time, quality of materials, processes and so on (Das & Ngacho, 2017). Most recently Abeysinghe and Jayathilaka (2022) evaluated the following client-related determinants of construction project performance; changes in design by the client during construction, slowness of client's decision-making, unreasonable project duration given by the client, delay in settling contractor claims by the client, financial difficulties of the client, delay in design approvals, poor communication with contracting parties, errors in design and specifications. Table 3 presents a summary of the client-related factors, their sources, and their frequencies.

Table 3: Client-Related Factors

	Client-Related Factors	**References**	**Frequency**
a)	Clear project goals by the client	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Kazaz et al. 2012; Aibinu & Jagboro, 2002)	6
b)	Client's experience in construction matters	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Kazaz et al. 2012)	5
c)	Involvement of the client in the project's decision-making processes	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Kazaz et al. 2012)	5
d)	Decision-making by the client	(Abeysinghe and Jayathilaka 2022; Das & Ngacho, 2017; Musarat & Ahad, 2016; Babalola et al. 2015; Kazaz et al. 2012)	4
e)	Managing of client expectations throughout the project	(Abeysinghe and Jayathilaka 2022; Das & Ngacho, 2017; Musarat and Ahad 2016; Babalola et al. 2015; Kazaz et al. 2012)	4
f)	Client's interference during construction	(Abeysinghe and Jayathilaka 2022; Das & Ngacho, 2017; Musarat and Ahad 2016; Babalola et al. 2015; Kazaz et al. 2012)	4

Consultant-Related Factors

These are the client's appointees, and their competence and effectiveness play a role in determining the success of the project. Aibinu and Jagboro (2002) addressed the following consultant-related factors; contract management, quality assurance/control, preparation and approval of drawings, and waiting time for approval of test and inspections. Babalola et al. (2015) discussed the following: consultants' commitment to ensure construction work is done according to specification, consultants' involvement in monitoring the project progress, consultants' cooperation to solve problems, and adequacy of design and

specification. Consultant-related factors include the availability of drawings, documentations for use by contractors, design specifications, and the extent of changes to the original project design (Das & Ngacho, 2017). Abeysinghe and Jayathilaka (2022) on their part explored the following factors; delay in inspections and completed work approvals, delay in material and payment approval, errors in contract documents, constant design changes by the consultant, delay in preparing and approving drawings and design documents, lack of experienced consultants, errors in design documents, and poor coordination and communication. Table 4 presents a summary of the consultant-related factors, their sources, and their frequencies.

Table 4: Consultant-Related Factors

	Consultant-Related Factors	**References**	**Frequency**
a)	Adequate experience by the project consultants	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015; Aibinu and Jagboro 2002)	4
b)	Adequacy of designs and specifications	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015; Aibinu and Jagboro 2002)	4
c)	Accuracy of designs and specifications	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015; Aibinu and Jagboro 2002)	4
d)	Timeliness of instructions, inspections, and approvals	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015; Aibinu and Jagboro 2002)	4
e)	Communication between consultants and project stakeholders	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015; Aibinu and Jagboro 2002)	4
f)	Involvement of consultants in monitoring the project's progress	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015)	3
g)	Cooperation of consultants in solving problems	(Abeysinghe & Jayathilaka, 2022; Das & Ngacho, 2017; Babalola et al. 2015)	3

Project Management-Related Factors

The project management function is an integral part of project success. Didenko and Konovets (2008) studied the following project management-related factors; proper planning/ scheduling, monitoring/ control, communication, and decision making abilities. Abbasbhai and Patel (2020) on the other hand established the following; communication systems, planning effort, implication an effective quality assurance, overall managerial actions, and control of sub-contractors. Musarat and Ahad (2016) and Gudienė et al. (2013) separated between project management team-related factors and project manager-related factors. The former include team's relevant past experience, team members' competency, decision making effectiveness, project organization structure, good communication, risk identification and allocation by team members, technical capability of team, and team personnel issues, while the latter include project manager competence, project manager experience, technical capability, leadership skills, coordinating skills, effective & timely conflict resolution, adaptability to changes, and perception of role and responsibilities.

In other research, the authors did not discuss the factors directly under the project management-related category. The following factors were discussed under "time management" by Ndavi (2019); clear definition of project scope during planning phase, proper preparation of schedules, and proper estimation of activity

duration. Wandiri and James (2020) broke down the project management concept into three categories namely project planning, project execution, and project monitoring and control. Under project planning, the following were discussed; involvement of all stakeholders during the project planning phase, clarity of objectives and goals in project plans, identification of risks and measures to reduce impact of risks in project plans, presence of work plans detailing a responsibility matrix for project team members, and use of Gantt charts and time-plans. Project execution covered the following: presence of work breakdown structure with activities clearly broken down, proper allocation of manpower according to the skills and experiences of the team members, availability of resources needed to execute the project. Lastly, project monitoring and control entailed the following: clear indication of project milestones, periodic tracking of projects, and corrections were made on the project to steer it back on track. Table 5 presents a summary of the project management-related factors, their sources, and their frequencies.

Table 5: Project Management-Related Factors

	Project Management-Related Factors	**References**	**Frequency**
a)	Proper planning/scheduling in the project	(Abbasbhai & Patel, 2020; Wandiri & James, 2020; Ndavi, 2019; Musarat & Ahad 2016; Gudienė et al. 2013; Didenko & Konovets, 2008)	6
b)	Effective monitoring and control	(Abbasbhai & Patel, 2020; Wandiri & James, 2020; Ndavi, 2019; Musarat & Ahad 2016; Gudienė et al. 2013)	5
c)	Effectiveness of communication among project stakeholders	(Abbasbhai & Patel, 2020; Wandiri & James, 2020; Ndavi, 2019; Musarat & Ahad 2016; Gudienė et al. 2013)	5
d)	Competence and technical capacity of the project manager	(Abbasbhai & Patel, 2020; Wandiri & James, 2020; Ndavi, 2019; Gudienė et al. 2013)	4
e)	Project manager's leadership skills	(Abbasbhai & Patel, 2020; Wandiri & James, 2020; Ndavi, 2019; Gudienė et al. 2013)	4
f)	Handling of arising issues	(Abbasbhai & Patel, 2020; Wandiri & James, 2020; Ndavi, 2019)	4

Contractor-Related Factors

Most of the time when a project is failing, the blame is usually passed to the contractor, and in most of the times, the contractor is not innocent. Aibinu and Jagboro (2002) explored the following contractor-related determinants, subcontractors, improper planning, site management, mistakes during construction, construction methods, and adequacy of contractor experience. The following factors were studied by Gudienė et al. (2013); technical and professional capability, company characteristics, experience, quality issues, economic and financial situation, health and safety conditions, and work conditions. Babalola et al. (2015) established long list including; project team leaders working relationship with others, motivating skills of the project team leaders, project team leaders experience, project team leaders commitment to meet cost, time and quality, planning effort, budget progress monitoring, technical skill of the project team leader, project team leader early and continuous involvement in the project, project team leader adaptability to changes in the project plan, implementing an effective safety, quality assurance program, control of

subcontractors works, organizing skill of the project team leader, and developing an appropriate organizing structure.

The following contractor-related factors were established by Musarat and Ahad (2016); technical and professional capability, contractor experience, economic and financial situation, owner's management capability, top management support, quality issues, health & safety conditions, work conditions, advanced technologies, and extent of subcontracting. Abeysinghe and Jayathilaka, (2022) on their part studied the following as contractor-related causes of poor project performance; poor planning and scheduling, shortage of skilled subcontractors/suppliers, financial difficulties of contractors, disagreements between the contractor and other parties, poor site management, monitoring, and control, errors during construction, underestimating the project duration, regular changes of subcontractor's staff.

Abbasbhai and Patel (2020) further discussed two categories which were found to be closely related to contractor-related factors. These were quality factors and people factors. The former included conformance to specification, unavailability of competent staff, quality of equipment and raw materials, quality training/meeting, and availability of experience persons while the latter included employee attitudes, recruitment and competence development, employee's motivation, and belonging to work. Table 6 presents a summary of the contractor-related factors, their sources, and their frequencies.

Table 6: Contractor-Related Factors

	Contractor-Related Factors	**References**	**Frequency**
a)	Contractor's experience	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016; Babalola et al. 2015; Gudienė et al. 2013; Aibinu & Jagboro, 2002)	6
b)	Competency of workers and professionals	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016; Babalola et al. 2015)	4
c)	Appropriateness of the construction methods used	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016; Babalola et al. 2015)	4
d)	Subcontractors' experience	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016; Babalola et al. 2015)	4
e)	Contractor financial capacity	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016)	3
f)	Contractor ownership of construction plant and equipment	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016)	3
g)	Use of current technologies by the contractor	(Abeysinghe & Jayathilaka, 2022; Abbasbhai & Patel, 2020; Musarat & Ahad, 2016)	3

Resource-Related Factors

Materials, labour and equipment are vital for the construction project. Aibinu and Jagboro (2002) categorized these into 'materials' and 'labour and equipment'. In the former category they listed quality of material and shortage in material while in the latter they included labour productivity, labour supply, and equipment availability and failure. Babalola et al. (2015) named this category 'labour and material related factors' and it included the following: skilful workers, quality control of materials, insufficient supply of materials, and escalation of material prices.

Kazaz et al. (2012) separated between 'resource-based factors' and 'labour-based factors' in their study of causes of poor project performance whereby the former included material storage problems, improper material selection, poor resource productivity, poor material management, transportation problems of resources and the latter included shortage of skilled workers, poor labour productivity, and construction defects. In a similar study of establishing the causes of poor performance, Abeysinghe and Jayathilaka (2022) discussed the following resource-related factors challenges; shortage of labourers, delay of delivering materials to the site, poor material handling at the site, low productivity of labourers, fluctuation of material prices in the market, inadequate numbers of equipment, failure of equipment, and personal disagreements between labourers. Table 7 presents a summary of the resource-related factors, their sources, and their frequencies.

Table 7: Resource-Related Factors

	Resource-Related Factors	**References**	**Frequency**
a)	Adequacy of construction materials	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012; Aibinu & Jagboro, 2002)	4
b)	Adequate number of workers	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012; Aibinu & Jagboro, 2002)	4
c)	Adequate construction equipment in the project	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012; Aibinu & Jagboro, 2002)	4
d)	Proper management of construction materials	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012; Aibinu & Jagboro, 2002)	4
e)	Proper management of labour	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012)	3
f)	Proper management of construction equipment	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012)	3
g)	Timely delivery of construction materials	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012)	3
h)	Timeliness of construction workers on site	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012)	3
i)	Timeliness of construction equipment on site	(Abeysinghe & Jayathilaka, 2022; Babalola et al. 2015; Kazaz et al. 2012)	3

Financial-Related Factors

Financial-related factors are one of the most critical factors that affect performance of construction projects. Abdul-Rahman et al. (2009) listed 19 financial-related factors and grouped them into four categories namely; late payment, poor cash flow management, insufficient financial resources, and financial market instability. Abbasbhai and Patel (2020) referred to them as cost-related factors and listed them as follows; market share of organization, cash flow of project, profit rate of project, overhead percentage of project, project design cost, material and equipment, project overtime cost, cost of rework, design changes.

One of the thorniest issues in construction projects especially those in developing countries is honouring payment certificates. Abdul-Rahman et al. (2009) established eight causes of late payment to contractors; withholding of payment by client, client's poor financial management, delay by consultant to perform valuation and certification of interim payment, contractor's invalid claim, provision of insufficient information and documentation for valuation, inaccuracy of valuation for work done, heavy work load of

consultant to do evaluation for variation order, and involvement of too many parties in the process of honouring certificates.

It has been claimed that cash flow is the lifeblood of the construction industry, and that ease of cash flow is a critical component in completing a successful project. Thus, a well-managed cash flow is critical to the successful completion of a project by doing a cash flow analysis on a regular basis to identify cash flow concerns. Cash flow forecasting is an important strategy for avoiding cash flow difficulties when analysing a project's cash flow. It is thus necessary to devise and implement methods to ensure that the project has a sufficient cash flow. As a result, a well-managed cash flow will increase the project's cash flow and, as a result, the project's timely performance (Okereke et al., 2022). A badly managed cash flow, on the other hand, indicates the inverse.

Abdul-Rahman et al. (2009) cited two reasons why clients find themselves with insufficient financial resources: difficulties in obtaining loans from financiers, and lack of allocation in government budget. The authors further established six causes of poor cashflow management during project execution; contractor handling too many projects at a time, contractor's unstable financial background, unqualified contractor and underbidding, insufficient regular cashflow forecasting, poor credit arrangement with debtors and creditors, and capital lock-up. According to Ahmed et al. (2003), the external element of weak economic conditions such as currency and inflation rate will also have a significant impact on the project's cash flow and hence damage the project's timely performance.

Kazaz et al. (2012) highlighted the following financial factors; delay of payments, cash flow problems, fluctuation in material prices, contractor's financial problems, and inflation. Ndavi (2019) identified the following ways of achieving financial resource planning; proper estimation of project cost, adequate funds to complete the project, proper estimation of the project budget, ability of the project manager to forecast expenses. Kuria (2019) pointed out that the two most important aspects of funding are its availability and accessibility. Table 8 presents a summary of the financial-related factors, their sources, and their frequencies.

Table 8: Financial-Related Factors

	Financial-Related Factors	**References**	**Frequency**
a)	Valuations for work	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019; Kazaz et al. 2012; Abdul-Rahman et al. 2009; Ahmed et al. 2003)	7
b)	Promptness of contractor payments	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019; Kazaz et al. 2012; Abdul-Rahman et al. 2009; Ahmed et al. 2003)	7
c)	Adequate financial resources	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019; Kazaz et al. 2012; Abdul-Rahman et al. 2009; Ahmed et al. 2003)	7
d)	Project cashflow	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019; Kazaz et al. 2012)	5
e)	The project budget	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019; Kazaz et al. 2012)	5

f)	A contingency sum	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019)	4
g)	Material prices	(Okereke et al., 2022; Abbasbhai and Patel 2020; Kuria 2019; Ndavi 2019)	4

Contract Management-Related Factors

Disputes are always bound to arise in construction projects. Their proper management is crucial for the successful completion of the project. Babalola et al. (2015) listed the following 'contractual relationship' factors; communication system among project participants, feedback capabilities between project participants, overall management actions, and control mechanism of the project activities. Aibinu and Jagboro (2002) highlighted the following challenges associated with managing contractual relationships; inappropriate organizational structure linking parties, major disputes and negotiations, and lack of communication between the parties. Table 9 presents a summary of the contract management-related factors, their sources, and their frequencies.

Table 9: Contract Management-Related Factors

	Contract Management-Related Factors	**References**	**Frequency**
a)	Existence of an agreement between the contractor and the client	Babalola et al. 2015; Aibinu & Jagboro 2002)	2
b)	Implementation of the agreement between the contractor and the client	Babalola et al. 2015; Aibinu & Jagboro 2002)	2
c)	Communication system among project participants	Babalola et al. 2015; Aibinu & Jagboro 2002)	2
d)	Presence of feedback systems in the project	Babalola et al. 2015; Aibinu & Jagboro 2002)	2
e)	Arising disputes are resolved promptly	Babalola et al. 2015; Aibinu & Jagboro 2002)	2

External Factors

Every project exists within an external environment. Both the project and the external environment have an effect on each other. In this context, the focus is on the effect of the latter on the former. Gudienė et al. (2013) lists the following external factors; *economic* (such taxes, competitiveness, credit, interest rate, inflation), *social* (such as demographics, religious, ethnic hostility, and social values), *technological*, *legal and political*, (ownership, change in the law, restrictions on imports), *physical* (weather, pollution, natural disasters, noise), *nature ecological* (provides raw materials and resources for the project) and *cultural factors* (values, attitudes, norms of behaviour). Didenko and Konovets (2008) and Nguyen and Watanabe (2017) also described the environment as social, political, economic, technical and technological. Babalola et al. (2015) added industrial relations to that list. Gudienė et al. (2013) referred to this category as 'institutional factors' and listed the factors as follows; construction regulations, standards, product and service certification, and construction permits.

Aibinu and Jagboro (2002) identified the following external threats to the success of a project; political conditions, weather conditions, regulatory changes and building code, unforeseen ground conditions, and economic conditions. Abeysinghe and Jayathilaka (2022) listed such threats as follows; delay in obtaining permissions/approvals from government, unknown sub-surface conditions (soil condition, water table etc.),

bad weather conditions, accidents during construction, changes in laws and regulations from the government, delay in utility services (electricity, water etc.), and covid-19 pandemic situation. Table 10 presents a summary of the external factors, their sources, and their frequencies.

Table 10: External Factors

	External Factors	References	Frequency
a)	Fairness of competition during the award of tenders	Abeysinghe & Jayathilaka, 2022; Nguyen & Watanabe 2017; Babalola et al. 2015; Gudienė et al., 2013; Didenko & Konovets, 2008; Aibinu & Jagboro, 2002)	6
b)	Stability of taxes and interest rates	Abeysinghe & Jayathilaka, 2022; Nguyen & Watanabe 2017; Babalola et al. 2015; Gudienė et al., 2013; Didenko & Konovets, 2008; Aibinu & Jagboro, 2002)	6
c)	Timeliness of construction permits	Abeysinghe & Jayathilaka, 2022; Nguyen & Watanabe 2017; Babalola et al. 2015; Gudienė et al., 2013; Didenko & Konovets, 2008)	5
d)	Government regulation	Abeysinghe & Jayathilaka, 2022; Nguyen & Watanabe 2017; Babalola et al. 2015; Gudienė et al., 2013)	4
e)	Adverse weather conditions	Abeysinghe & Jayathilaka, 2022; Nguyen & Watanabe 2017; Babalola et al. 2015; Gudienė et al., 2013)	4

Effect of Finance Sources on the Construction Project Performance

Construction projects are capital-demanding and necessitate a consistent flow of financial resources in order to meet project targets and objectives. Financing is critical to the success of every construction project. Indeed Okereke et al. (2022) posit that finance is essential in every project, especially construction projects, to enable continuous and sustainable material procurements, labour, and other project resource requirements. However, obtaining financing for capital in the construction industry is frequently difficult. Different contracting formats, lengthy approval processes, and other issues are examples of such problems.

Finance has an impact on project success since it influences several operations, including the project completion date. According to Gundes et al. (2019), construction contractors' success is heavily reliant on the specific terms and the availability of sufficient finances to carry out planned projects. Further, Abdul-Rahman et al. (2009) posits that inadequate cash flow management, late payment, insufficient financial resources, and financial market instability all have a substantial impact on construction project schedule performance. Okereke et al. (2022) noted that the source of finance has the following impacts on the construction process; improve investment in technology, improve managerial capacity, enable early mobilizations of work on site, better competitive strength, high quality of the project, promptness in project delivery, work can proceed without undue delays, risk-sharing among all the parties, reduced burden from the sheet of government, does not influence the financial liquidity and debt ratios, helps secure returns on investment, eliminate the risks of project completion delay and abandonment, and enhance the investment in the industry.

Hypothesized Relationship among the Variables

This research hypothesized that the performance of mortgage financed construction projects is influenced by the aforementioned ten explanatory variables. Further, the research acknowledges the presence of another variable that affects the relationship between the performance of MFCPs and the identified

determinants. This moderating variable is Mortgage Financing (Z). Statistical analysis should be used to measure the interaction between the moderator variable and the independent variables. If this relationship is found not to be statistically significant, then the moderating variable will be treated just like another independent variable. The hypothesized relationships have been presented in Figure 2.

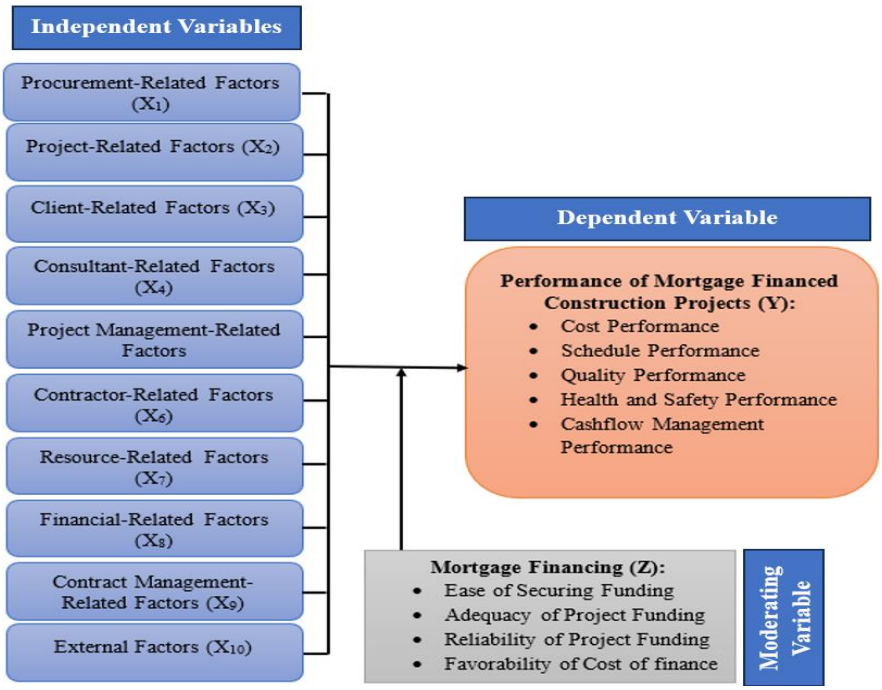


Figure 2: Conceptual Framework

Source: (Author, 2025)

Conclusion

The main limitation of this study was due its conceptual rather than empirical nature. The study concluded that the investigated factors were critical for the success of MFCPs and recommended an empirical study to be conducted in Kenya to evaluate the strength and effect of these determinants on the performance of MFCPs.

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