SCHOOL OF COMMERCE

DEPARTMENT OF PROJECT MANAGEMENT

Assessment Of Project Closeout Challenges And Practices The Case Of East Africa Bottling Sebeta Plant Project

A Project Work Submitted to Addis Ababa University College of Business and Economics School of Commerce in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Project Management (MAPM)

Prepared by- BINYAM AFEWORK

ID.NO- GSE/0842/13

Advisor – TEKLEGIORGIS ASSEFA(Ph.D.)

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ADDISABABA, ETHIOPIA

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ADVISOR- Dr. TEKLEGIORGIS ASSEFA

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Declaration

I, Binyam Afework, declare that this paper is a presentation of my original research work on the topic entitled “Assessment of project close out challenges and practices: the case of East Africa bottling SC, Sebeta plant project.” in partial fulfillment of the requirements for Masters of Arts at Addis Ababa University. This work has not been submitted for a degree to any other university. All the references are also duly acknowledged as listed in the references

_____ _____

BINYAM AFEWORK DATE

Letter of Certification

This is to certify that the thesis is prepared by Mr. Binyam Afework entitled “Assessment of project close out challenges and practices: the case of East Africa bottling SC Sebeta plant project” and submitted in fulfillment of the requirement for the Degree of Masters of Arts in Project Management complies with the regulation of the university and meet accepted with the respect to originality and quality.

APPROVED BY BOARD OF EXAMINER

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Dean Approval Signature Date

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External Examiner Signature Date

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Internal Examiner Signature Date

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Thesis Advisor Signature Date

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Table of contents

List of tables

ABSTRACT

Project closeout is the final phase of a project's lifecycle where the project team delivers the final product or service to the customer and completes all project-related activities. However, project closeout practices and challenges can be a significant concern for many organizations, including the East Africa Bottling Sebeta Plant Project. To ensure successful completion and transfer of deliverables to the client, it is important to understand the challenges and best practices associated with project closeout. The study aimed to assess the challenges and practices of project closeout in the case of the East Africa Bottling SC Sebeta Plant Project using a descriptive research design. The sample for the study was carefully selected to ensure participants had relevant experience and knowledge of the project closeout process. The study utilized both primary and secondary data, including questionnaires, interviews, and project documents to analyze and identify the challenges and best practices. The study found that external challenges, such as communicating changes to the project scope, payment of taxes and documentation, and ensuring all payment documents were readily available during closeout, were important to settle any legal issues in a timely manner. The study also found that addressing client feedback in a timely manner was important. Regarding internal challenges, the study found that keeping customers informed of the project closeout process and any changes that may affect them, being aware of the timeline and deadline for specific tasks, and properly handing over project documents to the client or stakeholders at the end of the project were crucial.

***Key words**: project close out, East Africa Bottling Sebeta Plant Project, project documentation, challenges, customer feedback*

ACRONYMS

CCBA: -Coca cola beverages Africa

EABSc: -East Africa bottling Share Company

PMI: -Project management institute

PMO: -Project management office

PLC: -Project life cycle

RII: - Relative importance index

SABCO: -South African Bottling Company

SPSS: - Statistical Package for the Social Sciences

CHAPTERONE

INTRODUCTION

1.1. Background of the study

Project closeout is the final stage of a project lifecycle, where the project team delivers the final product or service to the customer and closes all project-related activities. It is a critical phase that ensures that the project objectives have been achieved, and the customer's requirements have been met. However, project closeout practices and challenges have been a significant concern for many organizations, and the East Africa Bottling Sebeta Plant Project was no exception. The project closeout phase takes place after physical construction is finished but before the project is handed over to the beneficiaries. Because of this phase, the project material is archived, the scheduled task is done, and organizational team resources are released to explore new activities (PMBoK, 2017). Thus, project closeout refers to the completion of a project contract, which includes a variety of administrative, contractual, and technical activities such as punch list completion, provision of "as-built" documents and operations and maintenance training, final inspections, corrections, claim and change order resolution, submission of contractors' verification forms, and final acceptance of the project (Tim Mrozowski et al., 2008).

One of the key challenges of project closeout in a manufacturing setting is ensuring that all project documentation is complete and accurate. This includes ensuring that all design and engineering documents, manufacturing and testing data, and other project-related documentation is properly archived and accessible to the relevant stakeholders. Another challenge is ensuring that all project-related activities are properly closed out, including resolving any outstanding issues, completing any necessary corrective actions, and ensuring that all contractual obligations have been met.

East Africa Bottling Share Company (EABSC) is a Coca-Cola bottler in Ethiopia and an affiliate of CCBA. It is the largest African Coca-Cola bottler, accounting for 40% of all Coca-Cola volumes on the continent. The east Africa bottling company has inaugurated its new 'mega factory' in Sebeta City in Ethiopia in 2022. The $100 million factory, located 25km from the capital, Addis Ababa, was the culmination of a three-year project that involved 14 local/international subcontractors, approximately 198 foreign nationals, 17 different nationalities, and 2000 employees during peak time.

1.2. Statement of the problem

The project closeout phase is often disregarded in the completion of a project, despite its importance in the project's life cycle. Contracting parties frequently experience issues during the closeout phase, even if they were successful during the preceding planning and execution phases (Dinsmore & Cabanis-Brewin, 2011). Project closeout is not straightforward since team members can be preoccupied with the next project rather than the current one, there may be issues that need resolution, resources may be low, and the requirement to provide documentation becomes crucial as the project draws to a close. The importance of the project closeout phase is often overlooked, which can result in negative impacts such as project delays, cost overruns, and unsatisfied clients (Project Management Institute, 2017).

Despite the criticality of project closeout, organizations face several challenges in executing an effective project closeout process. The first challenge is incomplete documentation, where project teams fail to document all project work, including changes, issues, and lessons learned. Incomplete documentation can lead to project delays, disputes, and legal issues, and it can also hinder the transfer of project ownership to the client or operational team. The second challenge is unresolved issues, where project teams fail to resolve all project issues before project closure. (O'Brien, 2018). Unresolved issues can result in project delays, cost overruns, and unsatisfied clients and they can also affect the organization's reputation and future business opportunities. The third challenge is inadequate resource allocation, where project teams fail to allocate sufficient resources for project closeout. Inadequate resource allocation can result in incomplete documentation, unresolved issues, and project delays, and it can also affect the quality of the project deliverables. (Kloppenborg & Opfer, 2016). The fourth challenge is the lack of a standardized project closeout process, where organizations do not have a formal process for executing project closeout. The lack of a standardized project closeout process can lead to inconsistencies and confusion among team members, hindering the efficient completion of the process.

The successful completion of a project is dependent on a well-executed project closeout process. However, project closeout is often challenging, and failure to execute this process effectively can lead to negative impacts, including project delays, cost overruns, and unsatisfied clients (Kerzner, 2017). This problem is particularly addressed in East Africa bottling sebeta plant project, where project closeout practices and challenges are not considered enough. The East Africa Bottling Sebeta Plant Project is a significant investment in the region, and its successful completion is critical for the company's growth and expansion plans.

Despite being a successful Coca-Cola bottler in Ethiopia, EABSC faced challenges in executing an

effective project closeout process at its Sebeta Plant. There is a lack of proper implementation on the project closeout practice on the project. The project team faced various challenges, including incomplete project documentation, where there were delays in the operational phase caused by difficulties in understanding the deliverables. There were also unresolved legal issues that continued to the operational phase causing confusion and dissatisfaction with some stakeholders. Other issues in regards to lack of a standardized project closeout process included inadequate resource allocation to some parts of the project which caused delays due to non-standardized project handover, lack of organization and communication, insufficient resources. These challenges impacted the timeline, budget, and deliverables of the project.

1.3. Research questions

For the purpose of this study, the following question will be addressed

- What are the internal challenges of project closeout in East Africa Bottling Sebeta plant project?
- What are the external challenges of project closeout in East Africa Bottling Sebeta project?
- What preparation should be made for project closeout?
- What are the key actions performed in project closeout?

1.4. Research objectives

The general objective of the paper:

- The main objective of this research is to assess the challenges and practices of project closeout in the case of East Africa Bottling Sebeta plant.

The specific objectives of the research paper are:

- To assess the internal challenges of project closeout in East Africa Bottling Sebeta plant project
- To assess the external challenges of project closeout of East Africa Bottling Sebeta project
- To assess preparation measures that should be taken for project closeout
- To assess the key actions performed in project closeout

1.5. Significance of the study

The research will offer insightful information about project closeout procedures and difficulties, which are essential for any project's success. The study's findings will help to identify the project closeout practices adopted by the project team and the challenges faced in implementing these practices. The study will also help to identify the risks associated with project closeout practices and challenges faced in implementing these practices. This will enable project managers and stakeholders to mitigate these risks and improve the project's success rate.

The significance lies in its potential to contribute to the existing body of knowledge on project closeout practices and challenges, particularly in the context of projects undertaken by East Africa Bottling Share Company. By identifying the specific practices and challenges encountered during the Sebeta Plant Project, this study can provide valuable insights and recommendations for future project managers in this industry. Furthermore, this study can also serve as a case study for other project managers and researchers to learn from. By examining the Sebeta Plant Project in detail, this study can provide a practical example of how project closeout practices and challenges can be addressed and managed. This can be particularly useful for project managers who are facing similar challenges in their own projects.

1.6. Scope of the study

The study assesses the project closeout practices and challenges of the East African Bottling Sebeta Plant Project. The study will assess the project closeout practices adopted by the project team, including the documentation of project deliverables, project evaluation, and customer acceptance. Challenges faced by the project team in implementing project closeout practices, including budget constraints, lack of resources, and time constraints, will also be assessed.

- **Geographical scope**

The study will only focus on East Africa Bottling Share company (EABSC) Sebeta plant project the company currently has 5 plants in the country, which include Addis Ababa plant, Diredawa plant, Bahir Dar plant and the newly acquired Ambo plant from these plants the study will only focus on the Sebeta plant project close out.

- **Temporal scope**

The study will cover the project close out phase of the plant from end of 2021 onwards to May, 2022 up to the project handover to the operational phase. The entire project lasted from 2019 to 2022.

- **Subject scope**

The study will cover the practices and challenges of the project close out phase at East Africa Bottling Share company sebeta plant and asses the successful practices and challenges faced by the project during the close out phase.

- **Methodological scope**

The study will combine both qualitative and quantitative research methods. The qualitative research methods will include interviews with selected key stakeholders involved in the project close out and

project handover including functional managers and operational stuff involved in the process.

1.7. Limitations of the study

Some of the purposely selected individuals for the sample may have been out of the country during the data collection period, which could limit the diversity of perspectives included in the study.

Limited Scope: The study may be limited by its focus on the Sebeta Plant Project only. The findings and conclusions may not be applicable to other projects or organizations, which could limit the generalizability of the study's findings.

1.8. Organization of the study

There will be five chapters in this research. Chapter one (this chapter) includes an overview and introduction to the subject, a statement of problem, the research questions, research objectives, significance of the study, scope of the study and limitations of the study. Chapter two presents different local and international literature reviews that are conducted by different scholars which present discussions and critiques of topics related. Chapter three reviews the methodology that will be used in this research, including a description of terminologies relating to methodologies used. Chapter four presents the results and discussions, and chapter five discusses the conclusion and future recommendation of the study.

CHAPTER TWO
REVIEW OF RELATED LITERATURE

2.1. Theoretical Review

According to Smith, (2021), there are many different types of manufacturing projects, not all of which include developing new products. Some projects may be more focused on optimizing existing practices or creating new ones. This might involve the construction of a new factory, like the case of East Africa Bottling Sebeta plant factory project, establishing a new assembly line, upgrading technologies, or updating the supply chain management system. In order to ensure that manufacturing projects are completed on budget and on time, and that no step is missed along the way, it is important that organizations establish a project management process to help provide structure, organization, and efficiency (Brioso et al 2020.).

A physical product or component is created as part of manufacturing projects. Numerous phases, including planning, designing, engineering, producing, assembling, testing, and quality assurance, are frequently involved in these projects. A project can be defined as a peculiar set of coordinated activities, executed by an individual or company to meet specific objectives with definite starting and finishing time (AAUSC, 2011). It is a complex, non-routine, one-time effort limited by time, budget, resources, and performance specifications designed to meet customer needs (Gray and Larson, 2008). It helps to achieve the three main constraints of scope, cost, and time (Charvat, 2003).

Due to the wide range of project types, sizes, and scopes, project management is a field that is particularly difficult to master. Project is a unique set of organized activities, with definite starting and finishing points, undertaken by an individual or organization to satisfy specific performance objectives within defined schedule, cost, and other performance parameters (Maylor, 2010). As stated by (Lewis 2001), a project is a one-time, multi-task job with a definite starting point, definite finishing or ending point, a clearly defined scope of work, a budget, and generally a temporary team.

2.1.1. Stages in project lifecycle

Project Life Cycle (PLC) provides a thorough explanation of every stage of the project's development, as well as each of the key project activities. The project life cycle might vary for projects because in real life the projects tend to differ from each other (Lock, 2003). Nevertheless, these models are useful to determine and guide from project’s initiation to the project closure (Field & Keller, 2007).

A typical full project lifecycle consists of the following phases – conceptualization, planning & design,

implementation, handing over, operation & maintenance, and termination of the project (Lock, 2003). PMBOK Guide (PMI, 2010) lists the traditional project development stages as – initiation, planning and design, executing, monitoring and controlling, and closing.

Field and Keller,(2007) elaborate a basic five-phased model having following stages – define, plan, organize, execute, and close. The authors mention that the first phase might be called as feasibility phase since (Lock, 2003) present the following lifecycle for project.

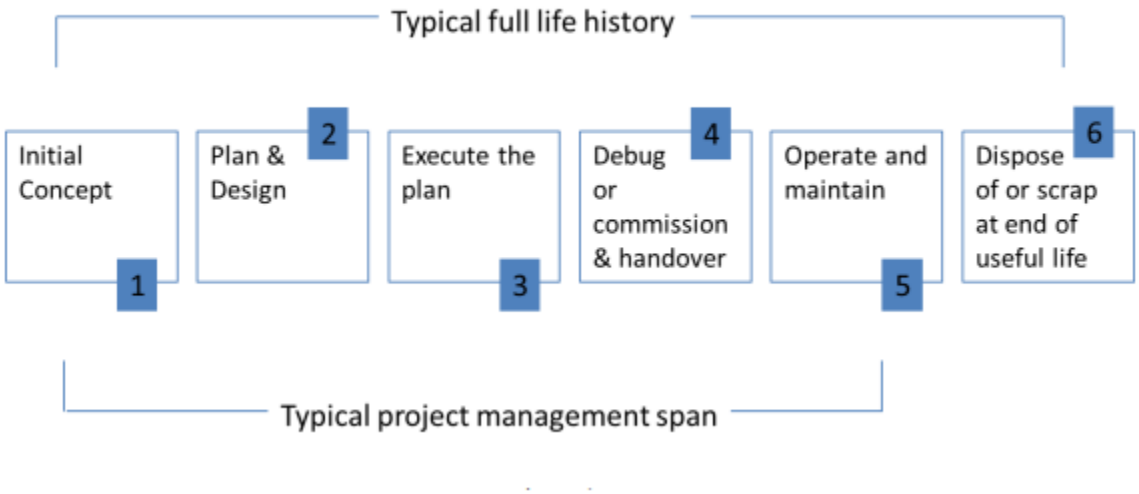

Figure2.1 various stages in project lifecycle (lock2003)

The initiation procedures were carried out by seeking approval before beginning the project, establishing a new project, or starting a new phase of an existing project. The planning and designing procedures were necessary in order to establish the project's parameters and choose the best course of action for achieving those objectives. The plan execution procedures were followed in order to finish the tasks listed in the project management plan and fulfill the project's requirements.

Monitoring and controlling processes required to track, evaluate, and oversee the project's performance; to spot any areas where the plan has to be changed; and to put those adjustments into place. Meanwhile, the project closeout procedures were carried out to finalize all tasks and officially close the project or phase across all process groups.

2.2. Project closeout

According to Pinto and Slevin (2019), project closeout is the process of completing all project activities, including the finalization of all documentation and deliverables, and formally closing the project. It is a critical phase of the project management process, and if not done correctly, it can lead to significant Delays, budget overruns, and other issues can arise during the project lifecycle. Project closure begins

during the project planning and not at the end of the project. Gardiner (2005) mentioned that closure activities should be carried out throughout the lifecycle of the project to ensure that the project can be closed properly.

Several studies have been conducted on project closeout practices and challenges, both in general and in specific industries. For example, a study conducted by Katsarakis et al. (2017) found that several factors can impact project closeout, including communication, project size, and team dynamics. Another study by Gao et al. (2018) focused specifically on the construction industry and found that poor project closeout practices can lead to legal disputes and other issues.

The project closure combines two procedures – commissioning of the project deliverables and documentation of all experiences in the project (Gardiner, 2005). The project closure is foreseeable, but how it is handled and when it is handled have a huge impact on the success of the project (Hormozi et al., 2000). Additionally, Cadle and Yeates (2004) have stated that the necessary technical documentation, user manuals, testing and training should be completed at this point. Project closure guidelines or a requirement includes are lessons learned, final project audits or assessments, project evaluations, product validations, and approval requirement (PMI, 2013). The final stage can be considered as part of the delivery of the project and present the closure process.

2.2.1. Types of project closeout

1. Normal closeout: As described by O'Brien (2018), normal closeout refers to the standard scenario for project closure when everything goes according to schedule or expectations. At this point, the client accepts the project, the project goals and objectives are met, and the typical project closure process starts. This is the standard scenario for project closure when everything goes according to schedule or expectations. Timeliness and execution are key components of a successful closeout. This encourages the General Contractor to closeout quickly, often at the expense of a truly great process (Mullen, 2020).

2. Premature closure: premature closure refers to the situation where most initiatives do not achieve all of their objectives or aims, or they are not given the chance to do so. Instead, they are prematurely closed by removing project components that were originally specified in the project scope. (Katsarakis et al. (2017). This can be because the client is cutting the project budget or the money has already been used up for financial reasons. According to research Smith et al., (2018), premature closure is a common occurrence in projects that require strategic importance and have strict deadlines, such as the launch of a new product. The customer may lose out on potential benefits if the product is delayed beyond the initial intended completion date.

According to Meredith and Mantel (2012), premature closure often occurs when a project has strategic importance and requires an earlier completion date than originally planned, such as the launch of a new product. Delaying the product launch could lead to missed opportunities for the customer

.**3. Perpetual projects:** Perpetual projects, sometimes referred to as "never-ending projects," are characterized by ongoing delays, setbacks, and issues (Smith, 2021). In addition, these projects often experience drift, constant modifications, and the addition of new elements, all of which further contribute to their non-completion (Brown, 2019).

According to Duncan (1982), projects often encounter issues due to constant adjustments and scope creep, which prevent them from achieving their intended objectives. This can lead to frustration and dissatisfaction among project managers, team members, and customers alike. To address this, project managers need to define the project scope and establish clear boundaries to avoid further scope creep. This can be done by limiting resources, changing the scope, or establishing a deadline to keep the project on track (Kerzner, 2017).

4. Failed projects: According to a study by the Project Management Institute (PMI), a common reason for project failure is inadequate funding from the client, leading to project termination (Fleming & Koppelman, 2016). Many projects are abandoned due to insufficient financial resources to complete the project successfully. Not all projects are successful. A project may go off the rails due to a number of elements coming together. From the perspective of the project manager, it's critical to list all the many indications that a project may be in jeopardy of failing, as well as to have a plan of action in place to handle the project termination should it happen successfully.

The responsibility of concluding a failed project can rest on different authorities, but it is typically the project manager who holds the final decision-making power. The project manager must undertake the appropriate measures to wrap up the project satisfactorily. In scenarios where closing procedures need adherence, consulting the company's main PMO authority is advisable (Kloppenborg, Anantatmula, & Wells, 2019).

5. Changed Priority: Organizational priorities and strategy direction frequently change. For instance, during the financial crises of 2008–10, corporations moved their emphasis from revenue-generating projects to cost-saving programs (Hambrick & Fredrickson, 2019). To take into account changes in the company's direction, the supervisory board updates project selection goals on a regular basis. During the process, projects can need to be changed or abandoned. As a result, a project may begin with a high priority but later on in its lifecycle see its status decline or collapse due to changing circumstances. It could be necessary to adjust or scrap ongoing projects if priorities shift.

Different methods of project ending create distinctive issues. To meet the type of project termination you will be facing, some modifications to general closing processes may be required.

The aim of project closure is to assess or evaluate the project, i.e., whether the results or output are achieved or not, and to draw lessons learned for future purposes (ITRM Guideline - Project Management Guideline, 2006). Project deliverables turnover, project status reports and lessons learned, resource allocation, financial account closure, project record collecting, and post-implementation review preparation comprise the project closure process.

The project closure stage requires different set of skills & competencies (Havila, Medlin, & Salmi 2013). Since project closure involves interaction with different types of stakeholders. The person handling the project closure is adapting at conducting the performance analysis and performing quality control of the project (Orr 2004). Field and Keller (2007) write that financial accounting skills are important for the project manager handing the closing of the project. For projects in public sector emotional maturity, diplomacy, conflict management, negotiation skills and managing stakeholder expectations are helpful.

2.2.2. Activities of project close out

Project closeout involves a series of activities that mark the end of the project. The activities are crucial in ensuring that the project goals and objectives are met, project deliverables are accepted, and the project is successfully closed (Kerzner 2017). Some of the activities of project closeout include conducting a punch list final project review, handing over project deliverables to the client, documenting the project's performance and lessons learned, inspection, site cleaning, training and archiving the project records. According to Shtub et al. (2019), the final review involves an assessment of the project's performance against the success criteria. It is an opportunity to identify project successes, constraints, and areas for improvement. The review findings provide a basis for evaluating the project's effectiveness and efficiency, making it a vital part of project closeout.

The handover of project deliverables is another significant activity during project closeout. It involves transferring ownership of the project's products and services to the client, ensuring that the client is satisfied with the delivery of the project. The process requires careful planning, documentation, and communication to ensure a smooth transition and avoid any misunderstandings between the project team and the client. Additionally, documentation of project performance and lessons learned is essential in project closeout. As noted by Kerzner (2017), documenting project performance provides important information for future projects and serves as a reference for decision-making. Lessons learned from the project are also captured in the documentation to improve project management practices and avoid

repeating mistakes in future projects. Archiving project records is the final activity in the closeout process and involves ensuring that project information is safely stored for future reference.

Punch-list

A punch list, also referred to as a snag list, is a document that outlines the remaining work items that need to be completed or corrected before a project can be considered finished. The primary goal of the punch list is to ensure that all project requirements have been met and that the final deliverables meet the client's expectations. The punch list typically includes incomplete work, incorrect installations, and any other issues or deficiencies that need to be addressed before the project can be considered complete (PMI, 2021).The punch list is usually created towards the end of the construction or installation phase of the project. It is created by a project manager or a quality control manager who inspects the project to ensure that all work has been completed to the required standard (CSI, 2020). The punch list is then shared with the project team, including the contractors and subcontractors, who are responsible for completing the items on the list. The punch list should be clear and concise, with each item listed separately and with a clear description of the issue that needs to be addressed. Each item on the punch list should also include a priority level, indicating the level of urgency for completing the item. The priority level can be based on the severity of the issue or the impact it may have on the project.

The project team should work together to complete the items on the punch list as soon as possible. The team should prioritize the items on the list based on the priority level and work on the most urgent items first. The team should also communicate regularly to ensure that everyone is aware of the progress being made on the punch list.

Inspection

Project closeout inspection is a critical component of the project management process. The purpose of the inspection is to ensure that all project requirements have been met, and the project meets the client's expectations. The project closeout inspection typically involves the review of project documentation, a final inspection of the project site, and a review of the project budget (CMAA, 2016).The review of project documentation involves the review of all project documentation, including the project plan, project schedule, and project budget. The purpose of the review is to ensure that the project has been completed according to the project plan and that all project requirements have been met. The review should also ensure that all project documentation is complete and accurate.

The final inspection of the project site involves a physical examination of the project to verify that all work has been completed according to the required standard. The inspection should be carried out by a qualified and experienced inspector who is well-versed in the project's requirements. The inspector should assess all work completed on the project, including the quality of the work, the equipment installation, and the final appearance of the project site. Once the project closeout inspection is finished, the project can be deemed complete, and the client can sign off on the project. The project closeout inspection is a critical element of the project management process as it helps to ensure that all project requirements have been met, the project fulfills the client's expectations, the project is completed within the approved budget, and all project documentation is complete and accurate.

Site cleaning

The International Organization for Standardization ISO, (2019) highlights that the aim of site cleaning is to guarantee that the project site is left in a clean and organized state after the project's completion. Site cleaning is essential to maintain a secure and healthy work environment and to ensure that the project site is ready for future use. Site cleaning should be carried out in compliance with the project plan and any applicable laws and regulations. The site cleaning plan should be developed jointly with the project team, including contractors and subcontractors, and communicated to all stakeholders.

Site cleaning typically involves the removal of all debris and waste materials from the project site. This may include construction materials, equipment, and other items that were used during the project. The site cleaning plan should include details on how the waste materials will be disposed of, including any applicable regulations or permits that may be required.

Document collection

According to the Project Management Institute PMI (2021), the document collection process is critical to ensure that all project documentation is complete, accurate, and ready for handover to the client. Document collection typically involves reviewing and collecting all project documentation, including contracts, plans, reports, and other documents generated during the project. The project closeout document collection process should be planned and executed with the project team, including contractors and subcontractors. The process should be communicated to all stakeholders, and any requirements for document collection should be clearly defined.

The document collection process should commence early in the project closeout phase to provide adequate time for the review and collection of all necessary documents. The project manager should identify all the required documents for handover to the client, including any contractual and regulatory requirements. The project manager should also establish a clear process for document review and approval, ensuring that all stakeholders have access to the necessary documentation.

The handover of project deliverables

According to Kerzner (2017), the handover of project deliverables is a critical component of the project management process. The handover should be planned and executed systematically, with a clear process for the transfer of ownership and responsibility from the project team to the client. The handover plan should include details on the acceptance criteria for the project deliverables, the roles and responsibilities of the project team and the client, and any contractual or regulatory requirements that must be met during the handover process. The handover plan should also be communicated to all stakeholders, and any requirements for the handover should be clearly defined to ensure that the handover is executed efficiently.

Training

Project closeout training is a crucial part of the project management process. The purpose of project closeout training is to ensure that all stakeholders, including the project team and the client, have a clear understanding of the project outcomes, lessons learned, and best practices. The project closeout training program should be tailored to meet the specific needs of the stakeholders and should be developed in conjunction with the project team. Project closeout training typically involves providing training to the project team, including contractors and subcontractors, and the client to ensure that they are prepared to manage the project deliverables and outcomes. The project manager should ensure that the project closeout training program is communicated to all stakeholders and that any requirements for the training program are clearly defined (Pinto and Slevin 2019).

2.3. Challenges of project close out

According to Turner, Keegan, and Crawford (2019), project closeout can be challenging due to several factors. These factors include the need to ensure that all project objectives have been met, that all stakeholders are satisfied with the project outcomes, and that all legal and regulatory requirements have

been addressed. Additionally, the project closeout process can be complicated by unexpected issues that arise during the closeout phase and by differing stakeholder expectations about the final deliverables. Project managers must be diligent in their planning and execution of the closeout phase to ensure that all requirements are met and that the project is successfully completed.

Furthermore, the authors suggest that effective communication is critical during the project closeout phase. Project managers must maintain open lines of communication with all stakeholders to ensure that any concerns or issues are addressed promptly and that all stakeholders are aware of the project's progress. Effective communication can also help to minimize misunderstandings and ensure that all stakeholders have a clear understanding of the project outcomes

Project closeout can present both internal and external challenges. Internal challenges are those that arise within the project team, while external challenges are those that arise from outside the project team.

2.3.1. Internal Challenges

1. **Incomplete project documentation**

The Association for Project Management APM (2021) notes that incomplete project documentation is a common challenge during project closeout. Project documentation plays a critical role in the closeout process as it provides a record of the project's activities, decisions, and outcomes. Incomplete project documentation can make it difficult to verify that all project requirements have been met and can delay the handover of project deliverables to the client. To address this challenge, project managers can take several actions, including identifying missing documentation, completing missing documentation, verifying completeness, communicating with stakeholders, and updating the project closeout plan. Project managers should update the project closeout plan to reflect any changes that were made to complete missing documentation

2. **Punch list delay**

The punch list identifies any remaining work that needs to be completed before the project can be considered finished. The architect or project manager typically generates the punch list, which includes items related to construction, finishing, and equipment installation. The project team must work efficiently to complete the items on the punch list promptly to avoid delays in the project's completion

schedule. It is essential to communicate effectively with all stakeholders to ensure that any issues or concerns are addressed promptly and that the project is completed successfully (Lock, 2017).

3. **Lack of organization and communication within the project team**

A lack of communication and organization can be a significant challenge during project closeout. Project managers must establish clear communication channels and ensure that all team members are aware of their roles and responsibilities during the closeout process. They must also implement effective project management tools and techniques to ensure that the project team is organized and that project information is readily available (Meredith and Mantel 2018).To address the lack of organization and communication within the project team during project closeout, project managers should establish clear roles and responsibilities.

Project closeout activities often require a significant amount of time, effort, and resources to complete, which can be a strain on the project team. When resources are insufficient, it can lead to delays, incomplete work, and errors in the closeout process.

4. **Changes in project scope or requirements from external stakeholders**

Changes in project scope or requirements from external stakeholders can be a significant challenge during project closeout. External stakeholders, such as clients, regulatory bodies, or other third-party organizations, may request changes to the project scope or requirements during the closeout phase. These changes can impact the timeline, budget, and deliverables of the project and can also lead to delays and additional work. To address this challenge, project managers must establish a change management process that includes identifying, evaluating, and approving changes before implementation. The project manager must also ensure that all stakeholders are aware of the change management process and that any changes are communicated effectively to all team members and stakeholders (Schwalbe, 2019).

5. **Insufficient resources to complete project closeout activities**

Pinto and Slevin (2018), state that insufficient resources can be a daunting challenge during project closeout, particularly when budgets and timelines are tight. This challenge can lead to delays in completing project closeout activities, compromising the quality of work, and errors in the closeout

process. To address this challenge, project managers must identify the required resources for the closeout phase and allocate them appropriately. Moreover, they should monitor resource usage throughout the project to identify potential shortages and take steps to address them promptly. Project managers can also consider collaborating with stakeholders to identify potential resource constraints and develop strategies to overcome them. By doing so, project managers can ensure that they have the necessary resources to perform project closeout activities efficiently and effectively.

2.3.2. External Challenges

1. Legal and regulatory compliance requirements

According to the National Institute of Standards and Technology (NIST) (2020), ensuring legal and regulatory compliance is a critical aspect of project closeout. Compliance requirements can vary depending on the industry, location, and project type, and project managers must ensure that all applicable laws, regulations, and industry standards are met throughout the project life cycle. Failure to comply with legal and regulatory requirements can result in legal and financial penalties, reputational damage, and project delays.

To successfully close out a project with respect to legal and regulatory compliance, project managers must review project documentation to identify all legal and regulatory requirements that apply to the project. This includes reviewing contracts, permits, licenses, and other legal documents that may impact the project. Once all applicable requirements are identified, project managers must develop a compliance plan that outlines all legal and regulatory requirements and the steps that will be taken to ensure compliance. The compliance plan should include a timeline for completing each compliance requirement, responsible parties for each task, and any necessary resources to ensure compliance. It is also essential to monitor compliance throughout the project and make any necessary adjustments to the compliance plan as requirements change.

2. Limited resources or availability of external contractors or vendors

According to Heagney (2016), limited resources can be a significant challenge during project closeout, particularly when relying on external contractors or vendors to provide specialized services or equipment. Insufficient resources can lead to delays, incomplete work, and errors in the closeout

process, which can negatively impact project outcomes. Moreover, external contractors or vendors may have their own scheduling and resource constraints that can further complicate the situation.

To overcome this challenge, project managers must carefully plan the resource allocation for the closeout phase. Project managers can identify the expected resource needs for each activity involved in the closeout phase, including personnel, equipment, and materials, and create a resource allocation plan. The resource allocation plan should also consider potential resource constraints and identify strategies to overcome them.

. To address this

- Prioritize activities: Project managers should prioritize closeout activities based on their importance and urgency. This will help ensure that critical activities are completed first and that resources are allocated appropriately.
- Identify resource requirements: Project managers should identify the resource requirements for each closeout activity that requires external contractors or vendors. This may include personnel, equipment, and materials.
- Negotiate timelines: Project managers should negotiate timelines with external contractors or vendors to ensure that they can complete their work within the required timeframe.

3. Changes in project scope or requirements from external stakeholders

Changes in project scope or requirements from external stakeholders can pose a significant challenge during project closeout (Kerzner (2017), these changes can come from various external stakeholders, such as clients, regulatory bodies, or third-party organizations, and may impact the timeline, budget, and deliverables of the project. Additionally, changes in project scope or requirements can lead to delays and additional work, causing project managers to miss their deadlines or exceed their budgets. To address this challenge, project managers need to establish a change management process that outlines how changes to project scope or requirements are identified, evaluated, and approved before implementation. The change management process should include clear communication channels with stakeholders to ensure that all parties are aware of the process and any changes made to the project scope or requirements. Additionally, project managers should work closely with stakeholders to determine the impact of any proposed changes and develop strategies to mitigate any negative effects on the project.

Project managers should also consider the potential risks associated with changes in project scope or requirements and develop contingency plans to address any potential issues. Communication with stakeholders is crucial to ensure that everyone is aware of any risks associated with changes to the project scope or requirements and the steps being taken to mitigate them.

4. Meeting client expectations within budget and timeline

Meeting client expectations within budget and timeline constraints during project closeout can be a challenging task for project managers. Clients and stakeholders have high expectations for project deliverables and outcomes, and they expect projects to be completed within the allocated budget and timeline. Meeting these expectations requires careful planning and execution throughout the project life cycle (Crawford 2020).To meet client expectations within budget and timeline constraints during project closeout, project managers should establish clear communication channels with clients and stakeholders from the outset of the project. This includes regular progress updates, status reports, and meetings to discuss any issues or concerns that arise. Effective communication can help project managers identify potential issues before they become major problems and ensure that all parties are aware of the project's status.

5. Adverse weather conditions or other environmental factors that impact project closeout activities

Adverse weather conditions or other environmental factors can significantly impact project closeout activities, particularly for outdoor projects. These factors can cause delays, damage to project deliverables, and safety hazards for project teams. Therefore, project managers must consider potential environmental risks and develop contingency plans to mitigate their impact on project closeout activities. To overcome this challenge, project managers should closely monitor weather conditions and other environmental factors that may impact project closeout activities. This includes regularly checking weather reports and consulting with local authorities to determine any potential risks. Project managers should also communicate with project teams and stakeholders to ensure that everyone is aware of any potential risks and the steps being taken to mitigate them. Pinto and Slevin (2018).

One strategy to overcome the impact of adverse weather conditions or other environmental factors is to adjust project schedules and timelines accordingly. Project managers should consider the potential

impact of adverse weather conditions or other environmental factors on project schedules and adjust timelines accordingly. This includes allocating additional time for potential delays and rescheduling activities as needed.

2.4. Empirical review

Project close out involves the completion of all project tasks, finalizing all project documentation, and transferring project deliverables to the client or end-user. However, project closeout is often challenging due to a variety of factors. In this empirical review, we will examine the current state of project closeout practice and the challenges associated with it, based on recent research findings.

2.4.1. Project Closeout Practices

In general, project closeout practices vary widely depending on the industry, size, and complexity of the project. However, studies have identified several common practices that are widely adopted across industries. For example, a study conducted by Hwang and Ng (2013) found that most project managers prioritize the following activities during project closeout:

1. Reviewing and finalizing project documentation
2. Conducting project evaluations and assessments
3. Conducting project reviews and lessons learned sessions
4. Conducting final inspections and audits
5. Closing out project contracts and agreements

In addition, some studies have identified the use of specialized project management software as a common practice during project closeout. For example, a study conducted by Wang and colleagues (2017) found that the use of project management software can significantly improve the efficiency and effectiveness of project closeout activities.

2.4.2. Project closeout challenges

Despite the importance of project closeout, it is often challenging due to various factors. Several studies have identified the following challenges associated with project closeout:

1. Incomplete project documentation: Incomplete project documentation is a common challenge during project closeout. Studies have found that incomplete project documentation can lead to delays, errors, and disputes between project teams and clients (Hwang & Ng, 2013).
2. Lack of organization and communication within the project team: Lack of organization and communication within the project team can lead to delays, confusion, and errors during project closeout (Kerzner, 2013).
3. Insufficient resources: Insufficient resources, including personnel, equipment, and materials, can be a significant challenge during project closeout. Studies have found that resource constraints can lead to delays, incomplete work, and errors in the closeout process (Bourne et al., 2011).
4. Changes in project scope or requirements from external stakeholders: Changes in project scope or requirements from external stakeholders, such as clients or regulatory bodies, can impact the timeline, budget, and deliverables of the project, and can also lead to delays and additional work .
5. Legal and regulatory compliance requirements: Legal and regulatory compliance requirements, such as environmental regulations and safety standards, can be a challenge during project closeout. Failure to comply with these requirements can result in fines, legal action, and reputational damage for the project team and the client.

2.4.3. Successful project close out practices

Successful project closeout is a crucial component of the project management process. It involves completing all remaining project tasks, finalizing all project documentation, and transferring project deliverables to the client or end-user. In this review, we will discuss research findings on successful project closeout practices.

1. Plan ahead: Planning is an essential aspect of successful project closeout. Project managers should plan for project closeout activities from the beginning of the project to ensure that all necessary activities are included in the project plan. According to a study by Jha and Iyer (2015), planning for project closeout activities helps ensure a smooth and successful closeout process.
2. Maintain open communication: Communication is the key to ensuring successful project closeout. Project managers should maintain open communication with all stakeholders throughout the closeout process, including the client, contractors, and regulatory bodies. According to a study by Hwang and Ng (2013), maintaining open communication helps identify any changes or issues early on and enables prompt action.

3. Document everything: Documentation is crucial during project closeout. Project managers should document all communication, decisions, and actions taken during the closeout process. This helps ensure that everyone is aware of what has been done and what still needs to be done. According to a study by Bourne et al. (2011), documentation helps ensure accountability and transparency in the closeout process.
4. Conduct project evaluations: Project evaluations are important to assess the success of the project and identify any lessons learned. Project managers should conduct project evaluations to identify areas for improvement and to ensure that the same mistakes are not repeated in future projects. According to a study by Picard and Geraldi (2013), project evaluations help improve future project performance and ensure a successful closeout process.
5. Address legal and regulatory compliance requirements: Legal and regulatory compliance requirements are a critical aspect of project closeout. Project managers should ensure that all legal and regulatory compliance requirements are met during the closeout process to avoid any potential legal or reputational risks. According to a study by Bourne et al. (2011), addressing legal and regulatory compliance requirements helps ensure that the project is completed successfully.
6. Use project management software: Project management software can help streamline the closeout process and improve efficiency. Project managers can use project management software to manage tasks such as document management, communication, and tracking progress. According to a study by Wang et al. (2017), the use of project management software can significantly improve the efficiency and effectiveness of project closeout activities.
7. Conduct final inspections and audits: Final inspections and audits are an essential component of successful project closeout. Project managers should conduct final inspections and audits to ensure that all project deliverables meet the required standard. This helps ensure that the client or end-user is satisfied with the project outcomes. According to a study by Hwang and Ng (2013), conducting final inspections and audits is a critical aspect of project closeout.

2.5. Conceptual framework

The project closure phase has its own share of problems it is a critical phase of the project management process. Successful project closeout requires careful planning and execution of all remaining project tasks, finalization of project documentation, and transfer of project deliverables to the client or end-user.

However, project closeout is often challenging due to various factors. Hearkens (2002) says that the problems could be largely categorized under three headings – technical, project team, and customer.

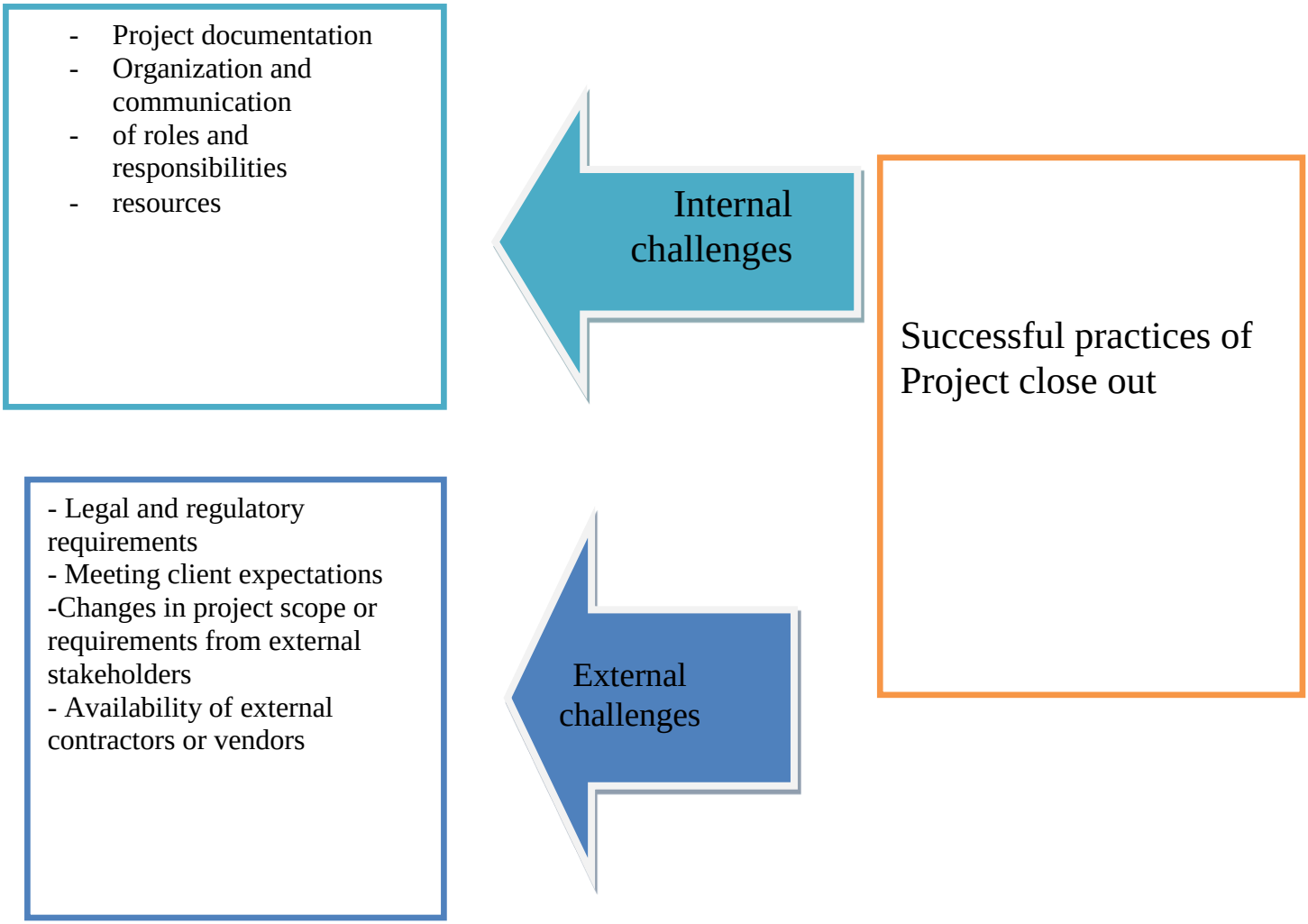

Figure 2.2 conceptual framework
(Developed by researcher based on literature review 2023.)

CHAPTER THREE
RESEARCH METHODOLOGY

3.1. INTRODUCTION

In this chapter, the methodology used for this thesis will be discussed in detail. This includes the research design, data collection and analysis methods, and ethical considerations. The research design will be explained, including the research approach, research strategy, and data collection techniques used. The data collection methods will be described, including the sampling technique, sample size, and data collection instruments. Finally, the data analysis methods will be outlined, including the statistical techniques used to analyze the data.

3.2. Research Design

The research design for this study is a descriptive approach, which aims to describe the challenges and practices of project closeout in the context of the East Africa bottling Sebeta plant project. The descriptive approach is appropriate for this study as it allows for the exploration and description of the project closeout process. Descriptive research is a type of research design that aims to describe and summarize a particular phenomenon or population (Babbie, 2016). It involves collecting data through various methods, such as surveys, interviews, and observations, and analyzing the data using statistical techniques to identify patterns and trends. The study is conducted on Sebeta manufacturing plant project undertaken by the East African bottling Sc. with a focus on the project close out phase of the project the practices and the challenges during the close out phase are studied.

In order to gather information from a section of the population of contractors, sub-contractors, clients, and other professionals who have experience in the closeout stage, a purposive sampling technique will be used. This technique involves selecting participants based on their expertise, knowledge, and experience in the closeout stage and other stake holders who were involved in the project and are affected by or who affected the close out phase have also participated.

In order to explain the variables both qualitative and quantitative data approaches are used mixed method research is a research design that combines both qualitative and quantitative approaches to provide a comprehensive understanding of a particular phenomenon (Creswell & Plano Clark, 2018). In the context of project management on this research a mixed method research approach is used to assess the challenges and practices of project closeout on Sebeta plant project.

3.3. Study Population

The population for this research is defined as the identifiable total set of elements of interest that are being investigated by the researcher (Zikmund, 2003). The population for this research consists of the individuals who were involved in the Sebeta plant project and are in a position to answer the research questions and to whom the results of the survey apply.

The target population for this research consists of professional employees of East Africa bottling Sc. who over saw the Sebeta plant project under taken by the company, consultants, and contractors and sub-contractors who were involved in the project. The Sebeta plant project is a manufacturing project that took three years to complete and involved 14 local and international subcontractors, approximately 198 foreign nationals, 17 different nationalities, and 2000 employees during peak time. The project involved various professionals, including project managers, engineers, architects, and other relevant professionals in the food and beverage industry.

3.4. Sampling

The type of sampling technique to use depends on the research question, research design, and characteristics of the population (Babbie, 2016). In this case of the project, a non-probability convenience and purposeful sampling approaches were found appropriate as the researcher is interested in selecting participants who have specific qualifications and experiences. Convenience sampling is a non-probability sampling approach where participants are selected based on their availability and accessibility. Participants are selected because they are easy to recruit or access, rather than being chosen randomly (Bryman, A. 2016).

Purposive sampling allows the researcher to select participants based on specific criteria, such as , professional background, knowledge, and experience to ensure that the sample is representative of the population and can provide valuable insights for the research question. Purposive sampling, also known as judgmental or selective sampling for this project involves selecting participants based on their expertise, knowledge, and experience in the closeout stage of the project.

The following are the groups of respondents who were chosen for this study a total of 63 people.

- ✓ Professional employees of East Africa bottling Sc. This group includes individuals who were employed by the company and who had direct involvement in the project closeout process, which make up 30 professionals in the project, engineering, finance and procurement departments.
- ✓ Selected senior project stuff members from main contractors and subcontractors which included 3 project managers, 8 project engineers and 10 supervisors.

- ✓ 15 Functional managers and supervisors who were involved in receiving the deliverables.

3.5. Data sources

The study required a comprehensive data collection approach that addresses the research question and the available resources. The data sources included:

Interviews: Semi-structured interviews would be conducted with project managers, team members, project engineers, and suppliers who have been involved in project closeout at the East Africa Bottling Sebeta Plant project. The interviews would be conducted in person. The interview questions would be designed to gather insights into the practices and challenges of project closeout, including the factors that affect successful project closeout, the challenges faced during the closeout process, and the strategies used to overcome those challenges.

Document Analysis: Project reports, project plans, and other documents related to project closeout at the East Africa Bottling Sebeta Plant project would be reviewed and analyzed. The document analysis would provide insights into the actual practices and procedures used during project closeout, and would help identify challenges and opportunities for improvement.

Primary data sources: The study relied on primary data obtained from 59 respondents. The primary data sources provide first-hand information about the practices and challenges of project closeout, and allow for a deep exploration of the experiences and perspectives of key stakeholders. By combining these data sources, the study can provide a comprehensive understanding of the practices and challenges of project closeout at East Africa Bottling Sebeta Plant project.

Secondary Data Sources: Secondary data sources such as industry reports, academic articles, and best practices guides in preceding projects under taken by the East Africa bottling Sc. would be reviewed to provide context and background information on project closeout practices and challenges in the sebeta plant project. The secondary data sources would provide a comparative analysis of the practices and challenges faced by other organizations, and would help identify best practices and potential solutions to the challenges identified in the study.

3.6. Data collection methods and instruments

To collect data for the study on the practices and challenges of project closeout at East Africa Bottling Sebeta Plant project, a questionnaire was utilized. According to Creswell (2014), questionnaires are a common and widely used method of data collection in social science research. They are particularly useful when seeking to measure attitudes, beliefs, and opinions of a large sample of respondents. Questionnaires are a cost-effective method of data collection, and they provide a

standardized approach to data collection, which can improve the reliability of the results (Babbie, 2016). Additionally, questionnaires provide respondents with anonymity, which can lead to more honest and candid responses (Fowler, 2014). For this study, a self-administered questionnaire was designed based on the research questions. The questionnaire was designed using a Likert scale to measure respondents' opinions and attitudes towards project closeout practices and challenges. The Likert scale is a well-established method for measuring attitudes and opinions, and it has been used in numerous social science studies (Likert, 1932).

3.7. Data analysis

In this study, the data analysis procedures used for quantitative data involved statistical analysis techniques, specifically descriptive statistics. Descriptive statistics are used to summarize and describe the features of a specific data set by providing short summaries about the sample and measures of the data (Hair, et al., 2019) the descriptive statistics used in this study included frequency and mean. Frequency refers to the number of times a particular value or response appears in the data set, while mean refers to the average value of all the responses. These descriptive statistics were used to provide a general understanding of the data set and to identify any patterns or trends that may be present.

In addition to descriptive statistics, the Relative Importance Index (RII) was also used in this study. The RII is a method used to determine the relative importance of different variables in a data set (Shrestha, 2019). The RII involves calculating a weighted average of the responses to each variable. It includes calculating a weighted average of the responses to each variable, which takes into account the importance of each response category. The RII was used in this study to determine the relative importance of different project closeout challenges and practices. The steps included developing a Likert scale questionnaire with questions related to each variable. The Likert scale should have at least five levels, such as strongly agree, agree, neutral, disagree, and strongly disagree, collecting data from the survey respondents and record their responses to each question and then finally Calculate the RII for each variable using the following formula:

$$RII = (\Sigma (W) / (N \times M)) \times 100$$

Where W=Weighted score for each level of agreement

N= Number of respondents and

M= Maximum possible score

In this study, the qualitative data from interviews and open-ended questions were analyzed using content analysis. Content analysis is a research method used to systematically and objectively identify and

analyze patterns and themes within a text (Krippendorff, 2013). It involves the process of extracting desired information from a text by systematically identifying specified characteristics of the text.

3.8.Validity and reliability of research instruments

The validity and reliability of the research instruments used are critical to ensure that the study findings are accurate and trustworthy (Babbie 2016). The research instruments used in this study, such as questionnaires and interview guides, are carefully designed and tested to ensure they accurately measure the constructs of interest. To ensure the validity of the research instruments, several measures will be taken. First, the research instruments will be developed based on a thorough review of the literature to ensure that they capture the relevant constructs and variables related to project closeout challenges and practices. Second, the research instruments is pilot tested with 6 sample of each participant groups two employees from East Africa bottling Sc., two employees from the contractor Elmi olendo and two functional managers to ensure that they are clear, understandable, and produce accurate results.

Reliability of research instruments is a crucial aspect of research methodology. Reliability refers to the consistency and stability of the research instrument in measuring the same construct over time or across different samples. A reliable research instrument is one that produces consistent results and allows for accurate and valid conclusions to be drawn from the data collected (DeVellis, 2016).

A widely used measure of reliability is the Cronbach's alpha coefficient, which is a measure of the internal consistency of a research instrument. Cronbach's alpha assesses the extent to which all the items on a research instrument measure the same construct, and provides a measure of the reliability of the instrument as a whole.

Cronbach‘s Alpha is given as

$$\alpha = \frac{N*C}{V+(N-1)*C}$$

where

N = the number of items

C = average covariance between item pairs

V = average variance

According to DeVellis (2016), a widely recognized author on research instruments, a reliability coefficient value of alpha of 0.70 or higher is generally considered acceptable for research instruments to be considered reliable.

The following table shows the cronbachs alpha result computed by SPSS.

Table 1 Cronbach's Alpha

Variable	Cronbach's Alpha	Variable	Cronbach's Alpha
Documentation	.757	Legal and regulatory compliance	.769
Organization and communication	.760	Client expectation	.750
Team Roles	.744	Contractor and vendor availability	.720
Resource	.724		

Source: Chen et al. (2010)

3.9. **Ethical consideration**

In conducting this research, it is found important to consider ethical considerations to ensure the protection and well-being of the participants involved and to maintain the integrity and credibility of the research. Here are some ethical considerations that were taken into account:

Informed Consent: Participants should be informed about the purpose of the study, their role in the study, and any potential risks or benefits involved. They should be given the opportunity to ask questions and provide voluntary consent to participate in the study.

Confidentiality: Participants' personal information and responses should be kept confidential and not shared with anyone outside the research team without their consent. The research team should take steps to secure and protect the data to prevent unauthorized access or disclosure.

Anonymity: Participants should have the option to remain anonymous if they choose to do so. This means that their personal information and responses will not be linked to their identity and will not be identifiable to the research team or others.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1. INTRODUCTION

In this chapter, the collected data from the respondents were systematically organized to facilitate analysis. Analysis involves a critical examination of coded data to draw inferences, while presentation involves arranging data in a clear and understandable manner (Bryman, 2016). The data were organized using a structured approach to enable easy analysis; the analysis process involved examining the data to identify patterns, trends, and relationships, which were then interpreted to draw conclusions. The data collected were analyzed in line with the research objective, which aimed to assess the challenges and practices of project closeout in the East Africa Bottling Sebeta Plant Project. The analysis process involved categorizing the factors that contributed to the challenges and practices of project closeout.

Response rate

According to Kombo and Tromp (2006), response rate is a crucial metric that pertains to the proportion or percentage of individuals who took part in a survey or research study out of the total number of individuals who were invited or sampled to participate. The response rate is a critical measure of the quality and representativeness of the data collected and determines the degree of participation and involvement of the sample population in the research, thereby impacting the validity and reliability of the results. Questionnaire were distributed both electronically and in person with a printed paper to 30 professionals of the East Africa bottling Sc. employees who over saw the completion of the project including the close out phase, 18 professionals from the contractor and sub-contractors of Elmi olendo which included project engineers, managers and supervisors with roles in the project close out phase. The rest included functional managers with responsibilities of overseeing the project close out, commissioning and receiving the deliverables from the project. A total of 65 Questionnaires were distributed to the respondents and 59 were collected having been filled.

This study achieved a response rate of (90.76%). According to Fowler (2013), a response rate of 80% or higher is considered excellent, while a response rate of 60% to 79% is good. A response rate of 50% to 59% is fair, while a response rate of less than 50% is poor. Table 4.1 provides a summary of the response rate achieved in this study.

Table 2 questionnaire response rate

Category	Frequency	Percentage
responded	59	90.77 %
Not returned	6	9.23 %
Total	65	100 %

Source: own survey (2023)

Interview response rate

The study aimed to interview four respondents but only three were interviewed indicating 60 % interview respondents.

Table 3 interview response rate

Category	Frequency	Percentage
Responded	3	75 %
Not returned	1	25 %
Total	4	100 %

Source: own survey (2023)

4.2. Demographic variables

In this section important demographic information is gathered from the project team members. This information included the sex of the respondents, job title or role of the respondents, their years of experience in project management, their educational background or their level of education.

By collecting this information, the research can better understand the characteristics of the project team members and how these factors might influence their perspectives and experiences related to project closeout.

Table 4 demographic variables

N.O	Demographic variable	Frequency	Percentage
1	Sex		
	Male	48	81.4
	Female	11	18.6
	Total	59	100
2	Work experience		
	0 – 5 years	32	54.2
	6 – 10 years	21	35.6

	11 – 20 years	6	10.2
	21 years above	0	0
	Total	59	100
3	**Education level**		
	1stdegree	40	67.8
	Masters	19	32.2
	PHD	0	0
	Total	59	100
4	**Category of respondent**		
	East Africa bottling Sc.	30	50.8
	Elmi olando	23	39
	Sub-contractor	6	10.16
	Total	59	100

Source: own survey (2023)

4.2.1. Sex

The gender demographic of the project team members is analyzed. The results showed that the majority of the team members were male, with 81.4% of the team members identifying as male, while only 18.6% identified as female. This gender disparity in the project team composition may have implications for project closeout as the underrepresentation of women in project management is a common issue in many industries, and efforts to address this disparity are essential for achieving more inclusive and effective project management practices. The gender analysis provides important insights into the composition of the project team and may help to identify potential challenges or areas for improvement in project closeout practices for the East Africa Bottling Sebeta Plant project.

4.2.2. Work experience

The work experience demographic of the project team members was analyzed. The results showed that a majority of the respondents had relatively less work experience in project management, with 54.2% of the team members having 0 to 5 years of experience, while 35.6% had 6 to 10 years of experience, and only 10.2% had more than 10 years of experience. According to a study published in the International Journal of Project Management, experienced project managers tend to rely on established practices and routines, which can limit their ability to innovate and adapt to changing circumstances. In contrast, less experienced project managers may be more open to new ideas and approaches, which can lead to more

innovative and effective project management practices. Overall, while experience is important in project management, it is not the only factor that contributes to success. A diverse team with a range of experience levels can bring different perspectives, ideas, and approaches to the table, which can lead to more innovative and effective project management practices.

4.2.3. Education level

The educational background demographic of the project team members is analyzed and the results showed that all of the respondents had completed a first degree, with 67.8% of the team members having a first degree education. Meanwhile, 32.2% of the team members had completed a master's degree. As research has shown that higher levels of education can be associated with greater expertise and knowledge in project management practices. Additionally, individuals with higher levels of education may be better equipped to think critically and creatively, which can lead to more innovative approaches to project closeout. However, having a first degree or a master's degree does not necessarily guarantee effective project management practices. Practical experience and on-the-job training are also important factors in developing effective project management skills.

4.2.4. Category of respondent

On this study East Africa Bottling SC constitutes the largest proportion of the respondents, with 50.8% of the total respondents being from this category. As the client, they are the primary beneficiary of the project outcomes and are responsible for ensuring that the project meets their requirements. this group constitute of experienced professionals on the food and beverage industry with previous experience in projects and therefore contributes a lot of advantage in the close out by taking lessons learned from previous projects undertaken such as the Bahirdar plant project.

Elmi Olendo, The contractor group constitutes 23% of the total respondents. As the primary executor of the project, the contractor had insights into the challenges faced during the project closeout and provided feedback on the effectiveness of the project management practices used. The rest of the respondents constituting 10.16% of the total respondents are subcontractor project supervisors who were responsible in installation of machinery and executed and provided feed back to the main contractor on the status of the project and the close out phase.

4.3. Project close out practices

In this section respondents response on the project close out of the project is analyzed the respondents were asked to give their opinions about the closeout process and practices. The responses were measured by a five-point Likert scale; 1. Strongly disagree 2. Disagree. 3. Neutral, 4. Agree, and 5. Strongly agree.

Table 5 project close out practices

N.O	QUESTIONS	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE	MEAN
1	The project closeout process was planned and communicated very well.	0	0	20	37	2	3.69
2	Project objectives and deliverables were achieved within the planned timeline	0	6	26	25	2	3.39
3	all the project stakeholders satisfied with the project results	0	8	22	26	0	3.36
4	all project documentation and records were properly archived and stored	1	20	32	6	0	2.73
5	all project assets and resources were returned or disposed of properly	1	29	28	1	0	2.49

Source: own survey (2023)

The result shows that the respondents seem to have a generally positive perception of the project closeout process being planned and communicated well, with 37(62.7%) respondents agreeing and 2

(3.4%)strongly agreeing. The mean score of 3.69 indicates that the majority of respondents were either neutral or agreed with the statement, and the overall score is closer to "agree" than "neutral." This suggests that the project management team was effective in planning and communicating the closeout process. The respondents' perceptions of whether the project objectives and deliverables were achieved within the planned timeline are less positive than for the planning and execution or question one with 6(10.2%) respondents disagreeing and 26(44.1%) being neutral. However, the mean score of 3.39 indicates that the majority of respondents were either neutral or agreed with the statement, and the overall score is closer to "agree" than "neutral." This suggests that while there may have been some challenges in meeting the project timeline, the project team was generally successful in achieving their objectives and deliverables within the planned timeline.

The respondents' perceptions of whether all project stakeholders were satisfied with the project results are also less positive than for how well the project close out is communicated and planned with 8(13.6%) respondents disagreeing and 22(37.3%) being neutral. However, the mean score of 3.36 still indicates that the majority of respondents were either neutral or agreed with the statement, and the overall score is closer to "agree" than "neutral." This suggests that while there may have been some stakeholders who were dissatisfied with the project results, the majority were satisfied.

With regards to documentation and records the responses indicate there should be improvement perceptions of whether all project documentation and records were properly archived and stored are less positive than the responses for planning and communication of the close out, deliverables and stakeholder satisfaction with 20(33.9%) respondents disagreeing and only 6(10.2%) agreeing. The mean score of 2.73 is closer to "neutral" than "agree," indicating that respondents were generally unsure or neutral about the statement. This suggests that the project management team may need to improve their documentation and record-keeping practices to ensure that they are properly archived and stored. The respondents' perceptions of whether all project assets and resources were returned or disposed of properly are the least positive of all five with 29(49.2) respondents disagreeing and only 1(1.7%) agreeing. The mean score of 2.49 is closer to "disagree" than "neutral," indicating that most respondents did not think that all project assets and resources were returned or disposed of properly. This suggests that the project management team may need to improve their asset and resource management practices to ensure that they are properly returned or disposed of.

Overall, these results suggest that while the project closeout process was generally planned and communicated well, there were some challenges in meeting the project timeline and ensuring that all stakeholders were satisfied with the project results. Additionally, there may be areas for improvement in

documentation and record-keeping practices and asset and resource management practices. The project management team can use these results to identify areas for improvement and make adjustments to their closeout processes and practices for future projects.

4.4. Internal challenges of project close out

In this section the internal challenges of project closeout that can arise from within the project team or organization and can impact the effectiveness and efficiency of the closeout process are analyzed with the distributed questionnaire.

4.4.1. Documentation and recording

Table 6 project close out documentation and recording

Documentation							
	1	2	3	4	5	mean	RII
Punch list /Snag list items completed and documented in a timely manner	2	30	16	11	0	2.61	0.522
changes to project documentation properly documented and communicated to the relevant stakeholders	3	7	34	15	0	3.03	0.691
Project documents properly handed over to the client or stakeholders at the end of the project.	2	11	12	22	12	3.53	0.708
project documents reviewed and analyzed to identify areas for improvement and lessons learned for future projects	10	23	17	9	0	2.42	0.484

Source: own survey (2023)

The given data provides insights into the importance of project documentation as an internal challenge in project closeout. We can analyze the data for the three questionnaire items related to project documentation Project documents properly handed over to the client or stakeholders at the end of the project (RII=0.708) received a mean score of 3.53, indicating that the respondents generally had a positive perception of project documents being properly handed over to the client or stakeholders at the end of the project. The RII value of 0.708 suggests that this item is relatively important in contributing to internal challenges during project closeout. This highlights the importance of proper handover of project documents to ensure that the client or stakeholders have all the necessary information to continue with future operations. The next item of importance Changes to project documentation properly documented and communicated to the relevant stakeholders (RII=0.691) received a mean score of 3.03, indicating that the respondents had a neutral perception of changes to project documentation being properly

documented and communicated to stakeholders.

Punch list /Snag list items completed and documented in a timely manner has an (RII=0.522) mean score of 2.61, indicating that the respondents generally had a negative perception of the timely completion and documentation of punch list and snag list items during project closeout. The RII value of 0.522 suggests that this item is important in contributing to internal challenges during project closeout. This highlights the need for timely completion of punch list and snag list items and proper documentation to avoid any delays in closing out the project.

4.4.2. Organization and communication

Table 7 organization and communication

Organization and communication							
	1	2	3	4	5	mean	RII
Team members aware of the timeline and deadline for the project closeout process	0	2	19	32	6	3.71	0.742
There was a clear and effective communication plan in place for the project closeout process	0	13	26	20	0	3.12	0.623
Team members informed of any changes or updates to the project closeout process in a timely manner	3	5	19	32	0	3.36	0.671
There was a designated point of contact for team members to ask questions or raise concerns during the project	3	11	23	17	5	3.17	0.633
stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them	0	2	11	39	7	3.86	0.772

Source: own survey (2023)

The study found that Stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them (RII=0.772) item received a mean score of 3.86, indicating that the respondents generally had a positive perception of stakeholders being informed of the project closeout process and any changes that may affect them. The RII value of 0.772 suggests that this item is relatively of the highest important in contributing to internal challenges in organization and communication during project closeout. This highlights the importance of informing stakeholders, including clients or customers, of the project closeout process and any changes that may affect them to

ensure that they are aware of the schedule and can plan accordingly.

The second level of important is Team members aware of the timeline and deadline for the project closeout process (RII=0.742) This item received a mean score of 3.71, indicating that the respondents generally had a positive perception of team members being aware of the timeline and deadline for the project closeout process. The RII value of 0.742 suggests that this item is relatively of 2nd important in contributing to internal challenges during project closeout in the organization and communication items. This highlights the importance of clearly communicating the timeline and deadline for the project closeout process to all team members to ensure that they are aware of the schedule and can plan accordingly.

The third ranking item is Team members informed of any changes or updates to the project closeout process in a timely manner (RII=0.671) This item received a mean score of 3.36, indicating that the respondents had a neutral perception of team members being informed of any changes or updates to the project closeout process in a timely manner. The next ranking item is There was a designated point of contact for team members to ask questions or raise concerns during the project (RII=0.633): This item received a mean score of 3.17, indicating that the respondents had a neutral perception of a designated point of contact being available for team members to ask questions or raise concerns during the project. This highlights the importance of having a designated point of contact who can address any questions or concerns that team members may have during the project closeout process.

The least ranking item is There was a clear and effective communication plan in place for the project closeout process (RII=0.623), received a mean score of 3.12, indicating that the respondents had a neutral perception of a clear and effective communication plan being in place for the project closeout process.

4.4.3. Roles and responsibilities

Table 8 roles and responsibilities

Roles and responsibilities							
	1	2	3	4	5	mean	RII
Team members aware of the timeline and deadline for their specific tasks during the project closeout	0	9	10	38	2	3.56	0.742
Team members provided with the necessary resources and support	0	5	7	42	5	3.8	0.623

Team members held accountable for their tasks and responsibilities during the project closeout	2	6	11	35	5	3.59	0.671

Source: own survey (2023)

The given data provides insights into the internal challenges associated with project closeout and the importance of team members being aware, provided with resources and support, and held accountable for their tasks and responsibilities. We can analyze the data for the three questionnaire items related to these challenges. Team members aware of the timeline and deadline for their specific tasks during the project closeout (RII=0.742) has the highest importance ranking with a mean score of 3.56, indicating that the respondents generally had a positive perception of team members being aware of the timeline and deadline for their specific tasks during the project closeout. This highlights the importance of communicating the timeline and deadline for specific tasks to ensure that team members can plan their work accordingly and complete their tasks in a timely manner.

The second ranking item in importance Team members held accountable for their tasks and responsibilities during the project closeout (RII=0.671) mean score of 3.59, indicating that the respondents generally had a positive perception of team members being held accountable for their tasks and responsibilities during the project closeout highlights the importance of holding team members accountable for their tasks and responsibilities to ensure that they are completed on time and at the expected level of quality. Third important item team members provided with the necessary resources and support (RII=0.623) received a mean score of 3.8, indicating that the respondents generally had a positive perception of team members being provided with the necessary resources and support during the project closeout, the importance of providing team members with the necessary resources and support, such as technology, tools, and training, to ensure that they can complete their tasks effectively and efficiently.

4.4.4. Resources

Table 9 resources

Resources							
	1	2	3	4	5	mean	RII
Resources, including personnel, equipment, and materials, properly allocated and available during the project closeout	3	17	12	24	3	3.12	0.623
resources used effectively and efficiently during the project closeout	1	20	27	11	0	2.81	0.562
resources properly disposed of or transferred at the end of the project closeout process	10	24	21	3	1	2.34	0.39
resource-related costs properly documented and accounted for during the project closeout	2	12	32	13	0	2.95	0.589
resource-related feedback or suggestions considered for future projects during the project closeout process	5	19	21	10	4	2.81	0.562

Source: own survey (2023)

The given data provides insights into the internal challenges associated with project closeout and the importance of properly allocating, using, disposing of resources during the process. Resources, including personnel, equipment, and materials, properly allocated and available during the project closeout (RII=0.623) received a mean score of 3.12, indicating that the respondents had a neutral perception of resources being properly allocated and available during the project closeout. The RII value of 0.623 suggests that this item is relatively ranking the most important in contributing to internal challenges regarding resources during project closeout. It highlights the importance of properly allocating resources, such as personnel, equipment, and materials, during the project closeout to ensure that all necessary resources are available and utilized efficiently. The second ranking item in the category is Resource-related costs properly documented and accounted for during the project closeout with (RII=0.589) and a mean score of 2.95, indicating that the respondents had a neutral perception of resource-related costs being properly documented and accounted for during the project closeout. This suggests the importance of properly documenting and accounting for resource-related costs to ensure that they are accurately tracked and allocated.

Third ranking item Resource-related feedback or suggestions considered for future projects during the

project closeout process (RII=0.562) suggests the importance of considering resource-related feedback or suggestions to improve resource management in future projects. a mean score of 2.81, indicating that the respondents had a neutral perception of resource-related feedback or suggestions being considered for future projects during the project closeout process. Resources used effectively and efficiently during the project closeout with a ranking 4, (RII=0.562) and a mean score of 2.81, indicating that the respondents had a neutral to negative perception of resources being used effectively and efficiently during the project closeout. It highlights the importance of using resources effectively and efficiently, such as optimizing resource usage to minimize waste and reduce costs.

The list ranking item Resources properly disposed of or transferred at the end of the project closeout process with an (RII=0.39) and a mean score of 2.34, indicating that the respondents had a negative perception of resources being properly disposed of or transferred at the end of the project closeout process. The RII value of 0.39 suggests that this item is relatively less important in contributing to internal challenges during project closeout. However, it is still critical to dispose of or transfer resources properly to ensure that they are not wasted or lost.

4.5. External challenges

External challenges related to legal and regulatory compliance, meeting client expectations, and external contractor or vendor availability have been identified as critical to the success of project closeout. The effective management of these challenges can help ensure that the project is completed on time, within budget, and to the satisfaction of stakeholders. Questionnaires have been used to assess these challenges and identify areas where project teams need to improve their performance.

4.5.1. Legal and regulatory compliance requirements

Table 10 legal and regulatory compliance requirements

Legal and regulatory compliance requirements							
	1	2	3	4	5	mean	RII
permits, licenses, and approvals obtained and properly documented during the project closeout	0	1	16	42	0	3.69	0.738
Environmental, health, and safety regulations followed and properly documented during the project closeout	1	0	13	38	7	3.85	0.769
contractual obligations, including warranties and guarantees, properly fulfilled during the project	0	2	11	31	15	4	0.8

closeout							
All taxes and fees properly paid and documented during the project closeout process	0	1	10	32	16	4.07	0.813

Source: own survey (2023)

The given data provides insights into the external challenges associated with project closeout and the importance of obtaining and documenting permits, complying with environmental, health, and safety regulations, fulfilling contractual obligations, and paying taxes and fees during the process. We can analyze the data for the four questionnaire items related to external challenges.

All taxes and fees properly paid and documented during the project closeout process ranks as the most important with an (RII=0.813) and a mean score of 4.07, indicating that the respondents had a positive perception of all taxes and fees being properly paid and documented during the project closeout process. The RII value of 0.813 suggests that this item is relatively the most important in contributing to external challenges during project closeout highlighting the importance of paying all taxes and fees related to the project and properly documenting all related activities during the project closeout.

The second ranking item is Contractual obligations, including warranties and guarantees, properly fulfilled during the project closeout with an (RII=0.8) This item received a mean score of 4, indicating that the respondents had a positive perception of contractual obligations, including warranties and guarantees, being properly fulfilled during the project closeout. The RII value of 0.8 suggests that this item is of second importance in contributing to external challenges during project closeout. The importance of fulfilling all contractual obligations, including warranties and guarantees, during the project closeout to ensure that the project is completed successfully and to the satisfaction of stakeholders.

Environmental, health, and safety regulations followed and properly documented during the project closeout with (RII=0.769) and a mean score of 3.85, indicating that the respondents had a positive perception of environmental, health, and safety regulations being followed and properly documented during the project closeout. The RII value of 0.769 suggests that this item is relatively third ranking important in contributing to external challenges during project closeout highlighting the importance of complying with environmental, health, and safety regulations and properly documenting all related activities during the project closeout. Permits, licenses, and approvals obtained and properly documented during the project closeout (RII=0.738) ranked fourth in the category This item received a mean score of 3.69, indicating that the respondents had a neutral to positive perception of permits, licenses, and approvals being obtained and properly documented during the project closeout showing importance of

complying with environmental, health, and safety regulations and properly documenting all related activities during the project closeout.

4.5.2. Meeting client expectations

Table 11 Meeting client expectations

Meeting client expectations	1	2	3	4	5	mean	RII
Project milestones and deadlines met in accordance with the client's expectations	0	0	12	42	5	3.88	0.776
Changes to the project scope or requirements properly communicated and approved by the client during the project closeout	0	0	9	35	15	4.10	0.820
Client(EABSc) feedback and concerns addressed and resolved in a timely and effective manner	0	0	10	37	12	4.03	0.806

Source: own survey (2023)

The given data provides insights into the external challenges associated with project closeout and the importance of meeting client expectations, communicating changes to the project scope or requirements, and addressing client feedback and concerns during the process. The data can be analyzed for the three questionnaire items related to external challenges.

Changes to the project scope or requirements properly communicated and approved by the client during the project closeout (RII=0.820) has the first rank in this category with a mean score of 4.10, indicating that the respondents had a positive perception of changes to the project scope or requirements being properly communicated and approved by the client during the project closeout. It shows a positive response regarding the importance of communicating any changes to the project scope or requirements to the client and obtaining their approval to ensure that the project is completed to their satisfaction.

Client feedback and concerns addressed and resolved in a timely and effective manner with (RII=0.806) ranks second with a mean score of 4.03, indicating that the respondents had a positive perception of client feedback and concerns being addressed and resolved in a timely and effective manner during the project closeout this item also shows a positive response on importance of addressing any client feedback and concerns in a timely and effective manner to ensure that the project is completed to their satisfaction. The third ranking item is Project milestones and deadlines met in accordance with the client's expectations (RII=0.776) with a mean score of 3.88, indicating that the respondents had a neutral to positive perception of project milestones and deadlines being met in accordance with the client's expectations .this item high lights the importance of meeting project milestones and deadlines in

accordance with the client's expectations to ensure that the project is completed on time and to the satisfaction of stakeholders.

4.5.3. External contractors or vendors availability

Table 12 External contractors or vendors availability

External contractors or vendors availability	1	2	3	4	5	mean	RII
External contractors or vendors effectively managed and communicated with throughout the project closeout	0	2	18	36	3	3.68	0.735
External contractors or vendors held accountable for their deliverables and responsibilities during the project closeout	3	6	12	31	7	3.56	0.711
External contractors or vendors aware of any changes or updates to the project closeout process	3	1	16	33	6	3.64	0.728

Source: own survey (2023)

The given data provides insights into the external challenges associated with project closeout and the importance of effectively managing and communicating with external contractors or vendors, holding them accountable for their deliverables and responsibilities, and keeping them aware of any changes or updates to the project closeout process.

External contractors or vendors effectively managed and communicated with throughout the project closeout ranked first with (RII=0.735) with a mean score of 3.68, indicating that the respondents had a neutral to positive perception of external contractors or vendors being effectively managed and communicated with throughout the project closeout. The RII value of 0.735 suggests that this item is relatively important in contributing to external challenges during project closeout highlighting the importance of effectively managing and communicating with external contractors or vendors to ensure that the project is completed on time, within budget, and to the satisfaction of stakeholders. External contractors or vendors aware of any changes or updates to the project closeout process (RII=0.728) ranked second with a mean score of 3.64, indicating that the respondents had a neutral to positive perception of external contractors or vendors being aware of any changes or updates to the project closeout process. It shows the importance of keeping external contractors or vendors aware of any changes or updates to the project closeout process to ensure that they are able to fulfill their

responsibilities effectively.

The third ranking item is External contractors or vendors held accountable for their deliverables and responsibilities during the project closeout (RII=0.711) with a mean score of 3.56, indicating that the respondents had a neutral to positive perception of external contractors or vendors being held accountable for their deliverables and responsibilities during the project closeout showing the importance of holding external contractors or vendors accountable for their deliverables and responsibilities to ensure that the project is completed successfully.

The RII value has a range from 0 to 1 (0 not inclusive) and has been categorized into five levels of importance as shown in the table

Table 13 RII value

RII Value	Importance level
From 0.8 to 1	High
From 0.6 to0.8	High medium
From 0.4 to 0.6	Medium
From 0.2 to 0.4	Medium low
From 0 to 0.2	Low

Source: own survey (2023)

By ranking the internal and external challenges to the project we can analyze the most important internal and external challenges faced during the project close out.

Table 14 RII rank

Internal challenge	**RII**	**Importance level**
Stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them.	0.772	High medium
Team members aware of the timeline and deadline for their specific tasks during the project closeout.	0.742	High medium
Team members aware of the timeline and deadline for the project closeout process.	0.742	High medium
Project documents properly handed over to the client or stakeholders at the end of the project.	0.70	High medium
changes to project documentation properly documented and communicated to the relevant stakeholders	0.691	High medium
Team members informed of any changes or updates to the project closeout process in a timely manner	0.671	High medium

Team members held accountable for their tasks and responsibilities during the project closeout	0.671	High medium
There was a designated point of contact for team members to ask questions or raise concerns during the project	0.633	High medium
There was a clear and effective communication plan in place for the project closeout process	0.623	High medium
Team members provided with the necessary resources and support	0.623	High medium
Resources, including personnel, equipment, and materials, properly allocated and available during the project closeout	0.623	High medium
External challenges	**RII**	**Importance level**
changes to the project scope or requirements properly communicated and approved by the client during the project closeout	0.820	High
All taxes and fees properly paid and documented during the project closeout process	0.813	High
Client(EABSc) feedback and concerns addressed and resolved in a timely and effective manner	0.806	High
contractual obligations, including warranties and guarantees, properly fulfilled during the project closeout	0.8	High
project milestones and deadlines met in accordance with the client's expectations	0.776	High medium
Environmental, health, and safety regulations followed and properly documented during the project closeout	0.769	High medium
permits, licenses, and approvals obtained and properly documented during the project closeout	0.738	High medium
External contractors or vendors effectively managed and communicated with throughout the project closeout.	0.735	High medium
External contractors or vendors aware of any changes or updates to the project closeout process	0.728	High medium
External contractors or vendors held accountable for their deliverables and responsibilities during the project closeout	0.711	High medium

Source: own survey (2023)

4.6. Open ended question results

Based on the two open-ended questions asked of the respondents, the following are some potential results:

1. Additional challenges on the project closeout practice of East Africa bottling Sebeta plant project:

- Outbreak of corona virus had a big impact on timely delivery of the project objectives and deliverables
- Lack of clear communication between project team members
- Inadequate training of project team members on project closeout procedures
- Poor documentation and record-keeping practices
- Insufficient resources allocated to project closeout activities

- Resistance to change from project team members
- Difficulties in obtaining sign-offs and approvals from stakeholders
- Unclear roles and responsibilities for project closeout activities
- Limited access to project information and documentation
- Delays in obtaining necessary permits and approvals
- Inadequate handover and transition planning for project deliverables

2. Practices of project closeout in which the Sebeta plant project was successful

- Timely completion of project deliverables
- Celebration of achievements
- Adherence to project close out policies
- Team work
- Managing diversity
- Paying of fees in time
- Risk mitigation
- Handling of contractors

CHAPTER FIVE

SUMMERY, CONCLUSION AND RECOMMENDATION

This chapter provides a summary of the major findings of the study, draws conclusions based on the analysis conducted, and presents recommendations for improving project closure practices. The summary of findings highlights the key issues and challenges identified during the study, while the conclusions provide insights into the overall implications of the study for project management practice. The recommendations presented in this chapter are based on the findings and conclusions of the study and are aimed at improving project closure practices and addressing the challenges identified. Overall, this chapter concludes the study by providing a comprehensive overview of the key findings, conclusions, and recommendations of the research.

5.1. Summary of findings

The main objective of this study is to assess the challenges and practices of project close out in the case of East Africa bottling Sebeta plant. Before proceeding with the main analysis, a reliability test was conducted to assess the consistency and reliability of the questionnaire used in the study. The reliability test was aimed at determining whether the questionnaire is a valid and accurate measure of the constructs being studied. The results of the reliability test, presented in Table 3.1, indicate that the questionnaire was reliable and acceptable, with all Cronbach's Alpha values exceeding the acceptable level of 0.7 in all the categories.

The gender demographic analysis of the project team revealed that there was a significant gender disparity, with 81.4% of the team being male and only 18.6% being female. The gender analysis provides valuable insights into the project team composition and may identify potential challenges or areas for improvement in project closeout practices for the East Africa Bottling Sebeta Plant project. More than half of the respondents (54.2%) had 0 to 5 years of experience in project management. Only 10.2% had more than 10 years of experience. All project team members had completed a first degree, with 67.8% having a first degree, while 32.2% had completed a master's degree indicating all the respondents have a higher level of education.

The study's largest respondent group (50.8%) was from East Africa Bottling SC, the client and primary beneficiary of the project outcomes. The contractor group (23%) had insights into the challenges faced during the project closeout and provided feedback on project management practices. Subcontractor project supervisors (10.16%) were responsible for machinery installation and provided feedback to the contractor on project status and closeout.

The study analyzed respondents' perceptions of the project closeout process using five questionnaire

items. The most positively rated item was the planning and communication of the closeout process, with 62.7% of respondents agreeing and 3.4% strongly agreeing. The least positively rated item was the proper return or disposal of project assets and resources, with 49.2% of respondents disagreeing and only 1.7% agreeing. The other three items were the achievement of project objectives and deliverables within the planned timeline (44.1% neutral, 10.2% disagree), stakeholder satisfaction with project results (37.3% neutral, 13.6% disagree), and the proper archiving and storage of project documentation and records (33.9% disagree, 10.2% agree). The study suggests that the project management team needs to improve their documentation, record-keeping, and asset/resource management practices to ensure a successful project closeout.

Internal challenges of project close out

Documentation and recording

The study analyzed the internal challenges of project closeout that can arise from within the project team or organization. The distributed questionnaire focused on project documentation, organization and communication, team roles and responsibilities, and resources.

Project documents properly handed over to client or stakeholders (RII=0.708, mean score = 3.53) - most important, positive perception, highlights importance of proper handover of project documents. Changes to project documentation properly documented and communicated to relevant stakeholders (RII=0.691, mean score = 3.03) - second in importance, neutral perception, emphasizes importance of proper documentation and communication of changes to project documentation. Timely completion and documentation of punch list or snag list items (RII=0.522, mean score = 2.61) - third in importance, negative perception, shows need for timely completion and proper documentation of punch list and snag list items to avoid delays in project closeout.

Organization and communication

Stakeholders informed of project closeout process and any changes affecting them (RII=0.772, mean score = 3.86) - most important, positive perception, emphasizes importance of informing stakeholders to ensure they are aware of schedule and can plan accordingly. Team members aware of timeline and deadline for project closeout process (RII=0.742, mean score = 3.71) - second in importance, positive perception, highlights importance of clear communication of timeline and deadline to team members. Team members informed of changes or updates to project closeout process in a timely manner (RII=0.671, mean score = 3.36) - third in importance, neutral perception, shows need for timely communication of changes or updates to team members.

Team roles and responsibilities

Team members aware of timeline and deadline for their specific tasks (RII=0.742, mean score=3.56) - most important, positive perception, emphasizes importance of clear communication of timeline and deadline for specific tasks. Team members held accountable for their tasks and responsibilities (RII=0.671, mean score=3.59) - second in importance, positive perception, highlights importance of holding team members accountable for completing tasks on time and at expected level of quality. Team members provided with necessary resources and support (RII=0.623, mean score=3.8) - third in importance, positive perception, shows importance of providing team members with necessary resources and support to complete tasks effectively and efficiently.

Resources

Resources properly allocated and available during project closeout (RII=0.623, mean score=3.12) - most important, neutral perception, highlights importance of proper resource allocation. Resource-related costs properly documented and accounted for during project closeout (RII=0.589, mean score=2.95) - second in importance, neutral perception, emphasizes importance of proper documentation and accounting of resource-related costs. Resource-related feedback or suggestions considered for future projects during project closeout process (RII=0.562, mean score=2.81) - third in importance, neutral perception, shows need for considering feedback or suggestions to improve resource management in future projects.

External challenges

Managing external challenges such as legal compliance, client expectations, and contractor availability is crucial for project closeout success. Questionnaires can help identify areas for improvement. Effective management ensures timely, budget-friendly, and stakeholder-satisfying project completion.

Legal and regulatory compliance requirements

In summery All taxes and fees properly paid and documented (RII=0.813, mean score = 4.07) - most important, positive perception, highlights importance of paying and documenting taxes and fees. Contractual obligations properly fulfilled (RII=0.8, mean score = 4) - second important, positive perception, emphasizes importance of fulfilling contractual obligations.

Environmental, health, and safety regulations followed and documented (RII=0.769, mean score = 3.85) relatively third important, positive perception, underscores importance of complying with regulations and documenting activities. Permits, licenses, and approvals obtained and documented (RII=0.738, mean score = 3.69) - fourth in importance, neutral to positive perception, shows importance of obtaining and

documenting permits, licenses, and approvals.

Meeting client expectation

Changes to project scope or requirements properly communicated and approved by client (RII=0.820, mean score = 4.10) - most important, positive perception, emphasizes importance of communicating changes and obtaining client approval. Client feedback and concerns addressed and resolved in a timely and effective manner (RII=0.806, mean score = 4.03) - second important, positive perception, highlights importance of addressing feedback and concerns in a timely and effective manner. Project milestones and deadlines met in accordance with client's expectations (RII=0.776, mean score = 3.88) - third in importance, neutral to positive perception, shows importance of meeting milestones and deadlines according to client's expectations to ensure satisfaction.

External contractors or vendors availability

External contractors or vendors effectively managed and communicated with (RII=0.735, mean score = 3.68) - most important, neutral to positive perception, highlights importance of effective management and communication with contractors or vendors. External contractors or vendors aware of any changes or updates to project closeout process (RII=0.728, mean score = 3.64) - second in importance, neutral to positive perception, emphasizes importance of keeping contractors or vendors informed of changes or updates. External contractors or vendors held accountable for their deliverables and responsibilities during project closeout (RII=0.711, mean score = 3.56) - third in importance, neutral to positive perception, shows importance of holding contractors or vendors accountable for successful project completion.

Over all the RII ranking clearly shows that the external challenges got more importance than the internal challenges indicating that the project challenges were more focused on external challenges than internal challenges with taxes and fees properly paid and documented during the project closeout process, East Africa bottling Sc. (EABSc) feedback and concerns addressed and resolved in a timely and effective manner and contractual obligations, including warranties and guarantees, properly fulfilled during the project closeout getting the highest ranks from both internal and external challenges. It is also found that all the external challenges were ranked above high medium while for internal challenges stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them ranked first and there were also items with RII scores of less than high medium.

5.2. Conclusion

Project closeout is a critical stage in project management, as it marks the transition from the project team to the operational team. It is one of the five stages of project management, alongside initiation, planning,

execution, and monitoring and control. Despite its importance, project closeout is often overlooked or given insufficient emphasis in project management.

Manufacturing projects, in particular, can be complex and require a well-planned project closeout process to ensure a smooth transition from the project team to the operational team. This is because manufacturing projects often involve the installation of new equipment, processes, and systems, which require specialized knowledge and training to operate efficiently and safely. The project closeout of the Sebeta Plant project involved several activities to properly hand over the project deliverables from the project team to the operational team. During the closeout phase, the project team, including the contractors, sub-contractors, and functional managers, worked together to ensure a smooth and successful transition of the project deliverables to the operational team.

The research aim of assessing the challenges and practices of the project closeout phase involved using a literate scale questionnaire, interviews, and project document review. Descriptive statistics, including mean frequency and relative importance index, were used to analyze the data and identify the most important items in the research. The Likert scale questionnaire provided quantitative data on the challenges and practices of the project closeout phase, as respondents rated the importance of various elements on a scale of 1 to 5. The mean frequency was used to identify the most frequently cited challenges and practices, while the relative importance index was used to identify the most significant challenges and practices based on their relative importance to the research.

The study showed that external challenges to the project close out had more importance level by the respondents and proper communication and approval of the client had the highest level RII indicating the importance of communicating changes to project scope to avoid schedule overrun the second highest level RII has to do with payment of all taxes and documentation emphasizing all payment documents need to be readily available during the close out and transferred to the client so that any legal issues are settled in time. The third high ranking item describes the importance of addressing client feedback in time over all the external factors are found to be of high importance to comply with regulations to avoid challenges of cost and schedule over run.

The internal challenges that ranked medium high importance level are:

- Stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them. Stakeholders play a critical role in the success of any project, including the project closeout process. It is important to keep stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them. One of the main reasons to keep stakeholders informed of the project closeout process is to manage

their expectations. Stakeholders, particularly clients or customers, may have certain expectations about the project's outcomes and timeline, and they may become frustrated or dissatisfied if these expectations are not met.

- Team members aware of the timeline and deadline for their specific tasks during the project closeout. It is important for team members to be informed and aware of their tasks and deadlines to ensure that the project closeout is completed within the set timeframe and to the required standards. If team members are not aware of their tasks and deadlines, it can lead to delays, misunderstandings, and errors in the project closeout process. This can impact the project's success and result in unsatisfied stakeholders.
- Project documents properly handed over to the client or stakeholders at the end of the project if project documents are not properly handed over to the client or stakeholders; it can lead to misunderstandings, delays, and errors in future projects. This can impact the organization's reputation and result in unsatisfied stakeholders.

5.3. Recommendations

Based on the findings external challenges of project closeout are indicated as the highest level of importance. The following recommendations are based on the result.

- Changes to the project scope or requirements should be properly communicated and approved by the client during the project closeout. This can be achieved by establishing clear communication channels with the client throughout the project
- All taxes and fees should be properly paid and documented during the project closeout process. This can be achieved by ensuring that all invoices and receipts are properly recorded and filed, and by working closely with the accounting department to ensure that all taxes and fees are paid in a timely manner.
- Client feedback and concerns should be addressed and resolved in a timely and effective manner. This can be achieved by establishing clear communication channels with the client and by creating a feedback mechanism that allows the client to provide feedback and raise concerns throughout the project closeout process.
- Contractual obligations, including warranties and guarantees, should be properly fulfilled during the project closeout. This can be achieved by reviewing all contractual obligations and ensuring that they are properly documented and fulfilled.

5.4. Future study

As a potential future study

- An assessment of the challenges and practices of project closeout in other companies within the same industry or region can provide valuable insights. This can help to identify common trends and best practices that can be adopted by the East Africa Bottling Share Company to improve their project closeout process.
- Risk Management: Explore the role of risk management in project closeout. This can include an analysis of how to identify, assess, and mitigate risks during the project closeout
- Organizational Learning: Study the impact of organizational learning on project closeout. This can include an analysis of how to promote a culture of continuous learning and improvement within the organization and how to ensure that lessons learned are incorporated into organizational processes and practices.
- Lessons Learned and Knowledge Transfer: Explore the role of lessons learned in knowledge transfer. This can include an analysis of how to effectively transfer knowledge gained from projects to other projects and how to ensure that lessons learned are properly documented and shared with relevant stakeholders.

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APPENDIXES

Appendix 1 INTERVIEW QUESTIONS

1. Can you describe your role and responsibilities in the project closeout process at East Africa Bottling Sebeta Plant?
2. What are some of the biggest challenges you have encountered during the project Closeout process, and how did you address them?
3. What aspects of the project closeout process do you feel have been successful, and why?
4. In your opinion, what are some of the key factors that contribute to a successful project? Closeout, and how have these factors been addressed at East Africa Bottling Sebeta Plant?
5. Can you describe any specific tools or methodologies used during the project closeout Process at East Africa Bottling Sebeta Plant, and how effective have they been?
6. What communication strategies were used during the project closeout process, and how effective were they in ensuring that all stakeholders were informed and engaged?
7. Were there any unexpected issues or challenges that arose during the project closeout Process, and how were they addressed?
8. Can you describe any lessons learned from the project closeout process at East Africa Bottling Sebeta Plant, and how have these lessons been applied in subsequent projects?
9. In your opinion, what improvements could be made to the project closeout process at East Africa Bottling Sebeta Plant, and why?
10. What advice would you give to someone who is leading a project closeout process at East Africa Bottling or a similar organization?

APPENDEX 2 QUESTIONNAIRE

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

POST GRADUATE PROGRAM IN MASTERS OF PROJECT MANAGEMENT

Thank you for agreeing to participate in this study by completing the questionnaire. The purpose of this research is to Assess the challenges and best practices of project closeout in the case of the East Africa Bottling Sebeta Plant project, for academic research and knowledge development as part of a master's partial fulfillment thesis developed by BINYAM AFEWORK from Addis Ababa University School of commerce.

Your participation in this study is voluntary, and your responses will be kept confidential. Your participation or non-participation will not lead to any accusation or penalty. Please do not put your name on the questionnaire. The overall purpose of this questionnaire is exclusively academic. Your response will not be used for any other purpose.

Section 1:- General Information

Put a TICK [√] mark where appropriate

1. Sex: Male ☐ Female ☐
2. Education background: - 1st degree ☐ Masters ☐ PHD ☐ other ☐
3. Work experience: - 0 – 5 years ☐ 6 – 10 years ☐ 11 – 20 years 21 years above
4. Experience within the project: - less than 1 year ☐ 1 – 2years ☐ 2 – 3years ☐
5. Category of respondent: - Employee of main contractor (Elmi ***Olando*** construction PLC) ☐

   Employee of East Africa bottling Sc ☐

   Employee of sub-contractor ☐

   Other, specify_____

Section 2:- Project Closeout Process

Please indicate your level of agreement on the statements by circling the numbers in the column using the following rating scale.

Where: 1 = Strongly Disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly Agree

N.O	Project Closeout Practices	scale				
		1	**2**	**3**	**4**	**5**
1	The project closeout process was planned and executed very well.					

2	Project objectives and deliverables were achieved within the planned timeline					
3	all the project stakeholders satisfied with the project results					
4	all project documentation and records were properly archived and stored					
5	all project assets and resources were returned or disposed of properly					
Internal challenges						
project Documentation						
6	Punch list /Snag list items completed and documented in a timely manner					
7	changes to project documentation properly documented and communicated to the relevant stakeholders					
8	project documents properly handed over to the client or stakeholders at the end of the project.					
9	project documents reviewed and analyzed to identify areas for improvement and lessons learned for future projects					
Organization and communication						
10	Team members aware of the timeline and deadline for the project closeout process					
11	There was a clear and effective communication plan in place					

	for the project closeout process					
12	Team members informed of any changes or updates to the project closeout process in a timely manner					
13	There was a designated point of contact for team members to ask questions or raise concerns during the project					
14	stakeholders, including clients or customers, informed of the project closeout process and any changes that may affect them					
Roles and responsibilities						
15	Team members aware of the timeline and deadline for their specific tasks during the project closeout					
16	Team members provided with the necessary resources and support					
17	Team members held accountable for their tasks and responsibilities during the project closeout					
Resources						
18	Resources, including personnel, equipment, and materials, properly allocated and available during the project closeout					
19	resources used effectively and efficiently during the project closeout					

20	resources properly disposed of or transferred at the end of the project closeout process					
21	resource-related costs properly documented and accounted for during the project closeout					
22	resource-related feedback or suggestions considered for future projects during the project closeout process					
	External challenges					
Legal and regulatory compliance requirements						
23	permits, licenses, and approvals obtained and properly documented during the project closeout					
24	Environmental, health, and safety regulations followed and properly documented during the project closeout					
25	contractual obligations, including warranties and guarantees, properly fulfilled during the project closeout					
26	All taxes and fees properly paid and documented during the project closeout process					
Meeting client expectations						
27	project milestones and deadlines met in accordance with the client's expectations					

28	changes to the project scope or requirements properly communicated and approved by the client during the project closeout					
29	client feedback and concerns addressed and resolved in a timely and effective manner					
External contractors or vendors availability						
30	External contractors or vendors effectively managed and communicated with throughout the project closeout					
31	External contractors or vendors held accountable for their deliverables and responsibilities during the project closeout					
32	External contractors or vendors aware of any changes or updates to the project closeout process					

1. Please write any additional challenges on the Project closeout practice of East Africa bottling Sebeta plant project?

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2. In which practices of project close out was the sebeta plant project successful?

