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**Communication Efficiency in projects and its importance to the
projects Schedule: A Case study of Al-Riyadah Company in
Dammam**

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1. Chapter 1: Introduction

1.1. Research Background

Projects are temporary and purposeful undertakings that bring together people, resources, information, and decisions to produce a defined result. Although projects may differ in industry, scale, and technical complexity, their progress depends on the ability of participants to exchange accurate information at the right time and to act on that information consistently. Communication is therefore not simply an administrative activity; it is the mechanism through which plans are explained, responsibilities are clarified, changes are coordinated, and emerging issues are escalated. The Project Management Institute (PMI, 2021) emphasizes that project work requires continual engagement with stakeholders and the purposeful exchange of information throughout the project life cycle. When the communication process is efficient, members of the project team are more likely to share the same understanding of priorities, dependencies, risks, and required actions.

Communication efficiency in projects refers to the extent to which information is clear, complete, timely, accurate, accessible, and followed by appropriate feedback. It also concerns the suitability of the channel used for a particular message and the speed with which questions, approvals, and decisions are addressed. Efficient communication does not mean communicating more often in every situation. Instead, it means communicating the information that the relevant person needs, in a usable form, through a suitable channel, and early enough to support the next action. Zulch (2014) describes communication as a foundation of project management because coordination among project participants depends on the continual sharing of meaning rather than on isolated reports or messages. In a project environment, even technically correct information can lose value when it reaches the recipient late, is misunderstood, or is not connected to a clear decision or responsibility.

The project schedule is one of the most visible expressions of project planning and control. It translates the scope of work into activities, milestones, dependencies, durations, and target completion dates. A schedule is used to establish expectations, coordinate different work packages, monitor progress, and anticipate the consequences of changes. PMI (2011) notes that a schedule model supports the sequencing of activities, coordination of events, early detection of problems, resource planning, and communication with stakeholders. Consequently, schedule performance is not limited to the final completion date. It includes the ability of a project team to meet intermediate milestones, complete activities as planned, recognize deviations early, respond to changes, and prevent avoidable delays from spreading through the project.

A close connection exists between communication and schedule performance because schedules depend on information flows. The project team requires timely updates about completed work, remaining work, constraints, approvals, design changes, material availability, resource allocations, and risks. Project managers also need reliable feedback from engineers, supervisors, planners, suppliers, and clients in order to revise priorities and take corrective action. If such information is incomplete or delayed, the project schedule may no longer represent the actual situation on the site or within the organization. Decisions may then be made using outdated assumptions, creating avoidable waiting time, rework, duplicated effort, or poorly sequenced

activities. Henderson (2004) found that project managers' communication competencies were associated with team members' satisfaction and productivity, illustrating that the process of encoding and decoding messages has practical consequences for project work.

Communication becomes particularly important when a project includes multiple functional units, external stakeholders, or interdependent tasks. A message about a change in scope, a revised design, a technical issue, or a delayed delivery can affect several activities at once. The impact may be manageable when the message is communicated clearly and promptly, but it can become serious when project participants receive inconsistent instructions or discover the change after they have already begun related work. Dialogic communication is valuable in this context because it encourages clarification, questioning, feedback, and a shared interpretation of information. Ziek and Anderson (2015) argue that communication in project management should be understood as dialogue rather than as one-way transmission. Such dialogue can improve the quality of decisions and support coordination when project conditions change.

The growing use of digital communication tools has made it easier for project teams to distribute updates, store documents, conduct virtual meetings, and track tasks. However, digital availability alone does not guarantee communication efficiency. Teams still need agreed rules for which information is shared through which channel, who is responsible for confirming receipt, where the approved version of a document is stored, and how urgent issues are escalated. Afridi, Turi, Zaufishan, and Rosak-Szyrocka (2023) report that digital communications can contribute to project efficiency, while ease of use and management support shape the value that organizations obtain from such tools. This suggests that communication efficiency results from both technology and management practice. It requires accessible tools, but it also requires clear processes, appropriate training, disciplined reporting, and an organizational culture that encourages timely feedback.

Research has repeatedly linked communication with broader measures of project performance. Chen (2021), for example, examined communication in capital projects and reported a relationship between communication and project performance through project technical and managerial competencies. Aziz (2022) also highlights the role of communication in project success in a case study context. While these findings establish the importance of communication, organizations often need more focused evidence to understand which communication practices matter most for a particular performance outcome. For project-based companies, schedule performance is an especially relevant outcome because delays can affect customer satisfaction, resource utilization, contract commitments, cost control, and the ability to begin subsequent work.

The present study focuses on Al-Riyadah Company in Dammam as a single organizational setting. Rather than assuming a particular communication problem or schedule failure within the company, the study proposes a structured assessment of employees' perceptions of communication efficiency and project schedule performance. A company-specific analysis is important because communication practices are shaped by organizational roles, reporting arrangements, project types, work locations, and the communication tools available to employees. The findings can therefore provide evidence that is more directly useful than general

recommendations derived from other industries or countries. The study will examine whether employees who perceive higher communication efficiency also report stronger schedule performance in the projects in which they participate.

The independent variable in this study is communication efficiency in projects. It will be assessed through indicators such as clarity and completeness of information, timeliness of communication, feedback and confirmation, suitability of communication channels, and coordination or information sharing across project participants. These dimensions capture both the content of communication and the way it supports action. The dependent variable is project schedule performance, which will be assessed through perceptions of adherence to planned milestones, timely completion of activities, early identification of delays, responsiveness to schedule changes, and reduction of delay-causing coordination problems. This approach allows the study to move from a broad statement that communication is important to a measurable examination of how efficient communication is associated with the schedule dimension of project performance.

By addressing this relationship, the study seeks to contribute to both knowledge and practice. At the knowledge level, it narrows the broad communication-project success discussion to a specific link between communication efficiency and schedule performance. At the practical level, it can help project managers and organizational leaders identify communication practices that deserve attention, such as clearer reporting formats, faster escalation procedures, more consistent meeting routines, shared digital platforms, or stronger feedback mechanisms. The study is designed as a quantitative, descriptive-analytical case study using a questionnaire administered to employees involved in projects at Al-Riyadah Company in Dammam. Its results will be interpreted carefully as evidence from one organization, while still offering lessons that may be relevant to comparable project environments.

1.2. Research Problem

Project schedules can be affected by many factors, including scope changes, resource constraints, procurement issues, technical difficulties, and external conditions. Nevertheless, the ability to identify these factors early and coordinate an appropriate response depends substantially on communication among project participants. When project information is unclear, late, incomplete, or not confirmed, team members may work from different assumptions. This can delay decisions, create rework, interrupt activity sequencing, and reduce the reliability of progress reporting. In contrast, when relevant information is shared accurately and promptly, project participants can coordinate tasks, resolve issues, and update the schedule before minor deviations become significant delays.

Although communication is widely recognized as a contributor to project success, there is a need to examine its relationship with schedule performance in the specific context of Al-Riyadah Company in Dammam. The proposed study does not assume that the company has poor

communication or persistent schedule delays. Instead, it responds to the absence of a structured, organization-specific assessment that measures communication efficiency and tests its association with project schedule performance from the perspective of employees involved in project work. Such evidence is needed to identify whether communication practices are sufficiently supporting the schedule and which dimensions may require improvement.

Accordingly, the research problem is expressed as follows: there is insufficient empirical evidence regarding the effect of communication efficiency in projects on project schedule performance at Al-Riyadah Company in Dammam. The study will address this problem by examining employees' perceptions of communication efficiency and project schedule performance and by testing the relationship between the two variables.

1.2.1. Theoretical Gaps

Existing literature generally treats communication as one of several broad project success factors. Many studies examine communication in relation to overall project performance, stakeholder satisfaction, team effectiveness, or organizational outcomes. Fewer studies isolate project schedule performance as the dependent variable and examine communication efficiency as a multidimensional construct that includes clarity, timeliness, feedback, channel suitability, and coordination. This creates a conceptual gap because a team may communicate frequently without communicating efficiently, and a project may achieve some success criteria while still experiencing schedule disruption.

In addition, prior research has often been conducted in different geographical, industrial, or organizational contexts. The transferability of findings to a project-based company in Dammam cannot be assumed without empirical investigation. The present study addresses this gap by applying a focused model that tests communication efficiency against schedule performance within one company. It will thereby provide context-specific evidence while using concepts that are consistent with established project-management literature.

1.2.2. Practical Gaps

At the practical level, project organizations need evidence that can guide improvements in day-to-day communication. General advice to "communicate better" is not sufficient for managers who must decide whether to improve reporting templates, meeting routines, document-control practices, digital tools, escalation paths, or feedback procedures. Without a structured assessment, it is difficult to know which communication practices employees perceive as effective and which practices are most closely related to keeping activities and milestones on schedule.

For Al-Riyadah Company in Dammam, the practical gap is the lack of a documented empirical assessment that links communication efficiency to project schedule performance within the company's projects. The results of this study may help the company prioritize communication-related interventions that support schedule control, timely decision-making, coordination, and early response to potential delays.

Based on the above, the main research question is:

To what extent does communication efficiency in projects affect project schedule performance at Al-Riyadah Company in Dammam?

1.3. Research Significance

This study is significant because it examines a practical project-management issue through a focused model that connects communication efficiency with project schedule performance. Its significance is considered at both the theoretical and practical levels.

1.3.1. At the theoretical level

The study contributes to the project-management literature by treating communication efficiency as a measurable construct rather than as a general statement about the importance of communication. It identifies the communication dimensions that are most relevant to project work, including clarity, timeliness, feedback, channel suitability, and coordination. This provides a more precise basis for discussing how communication supports project outcomes.

The study also contributes by focusing specifically on schedule performance. Much of the literature addresses project success as a broad concept involving time, cost, quality, stakeholder satisfaction, and strategic benefits. By focusing on the schedule, the study clarifies how communication may influence the timely completion of activities, adherence to milestones, management of changes, and early recognition of deviations. The findings may provide a useful basis for future researchers who wish to compare communication dimensions across project environments or investigate additional factors that influence schedule outcomes.

1.3.2. At the practical level

The study may assist managers and project teams at Al-Riyadah Company in recognizing the communication practices that are most strongly associated with schedule performance. The findings can support practical improvements such as clearer task instructions, standardized progress reporting, more reliable document control, defined meeting and escalation routines, and communication channels that are appropriate for different types of project information.

The study may also benefit project planners, engineers, supervisors, coordinators, and other team members by emphasizing the importance of confirming understanding, sharing updates promptly, and raising issues before they affect critical activities. At the organizational level, the results can help guide training, communication policies, and the use of digital collaboration tools. Finally, the study can provide a baseline for future internal assessments of communication and schedule performance.

1.4. Research Questions

1. What is the level of communication efficiency in projects at Al-Riyadah Company in Dammam?
2. What is the level of project schedule performance at Al-Riyadah Company in Dammam?
3. Is there a statistically significant relationship between communication efficiency and project schedule performance at Al-Riyadah Company in Dammam?
4. To what extent do the dimensions of communication efficiency - clarity and completeness, timeliness, feedback, channel suitability, and coordination - affect project schedule performance?
5. Which communication-efficiency dimension has the strongest perceived contribution to project schedule performance?

1.5. Research Objectives

1. To assess the level of communication efficiency in projects at Al-Riyadah Company in Dammam.
2. To evaluate the level of project schedule performance at Al-Riyadah Company in Dammam.
3. To examine the relationship between communication efficiency and project schedule performance.

4. To determine the effect of communication-efficiency dimensions on project schedule performance.
5. To provide recommendations that may improve communication practices and support stronger schedule performance.

1.6. Research Hypotheses

The study will test the following hypotheses at a significance level determined in the analysis plan:

- H01:** Communication efficiency in projects has no statistically significant effect on project schedule performance at Al-Riyadah Company in Dammam.
- H1:** Communication efficiency in projects has a statistically significant positive effect on project schedule performance at Al-Riyadah Company in Dammam.
- H1a:** Clarity and completeness of communication have a statistically significant positive effect on project schedule performance.
- H1b:** Timeliness of communication has a statistically significant positive effect on project schedule performance.
- H1c:** Feedback and confirmation have a statistically significant positive effect on project schedule performance.
- H1d:** Suitability of communication channels and coordination among project participants have a statistically significant positive effect on project schedule performance.

1.7. Research Model

The proposed model treats communication efficiency in projects as the independent variable and project schedule performance as the dependent variable. Communication efficiency is operationalized through clarity and completeness, timeliness, feedback and confirmation, channel suitability, and coordination or information sharing. Project schedule performance is operationalized through adherence to milestones, timely completion of activities, early identification of schedule deviations, responsiveness to changes, and reduction of coordination-related delays.

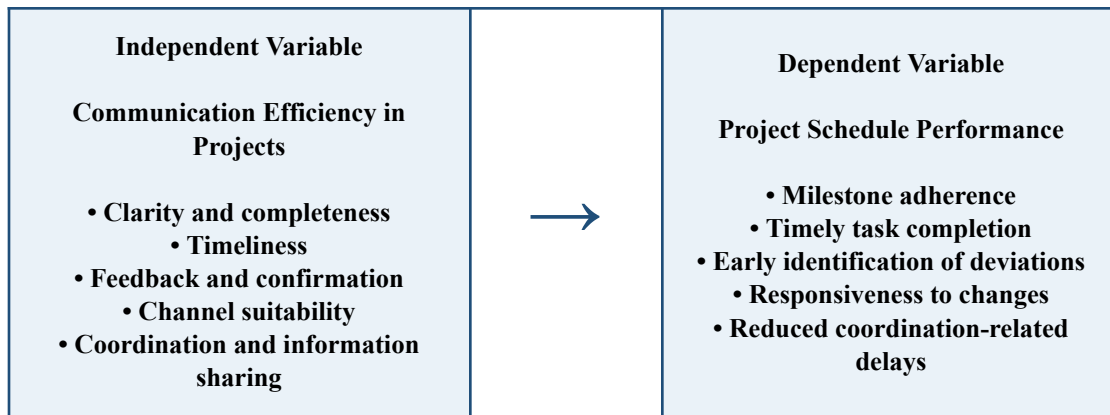


Figure 1.1. Proposed Research Model

Source: Developed by the researcher based on the reviewed literature.

1.8. Research Methodology

This study will use a quantitative, descriptive-analytical research design. A quantitative design is appropriate because the study seeks to measure employees' perceptions of communication efficiency and project schedule performance and to test the statistical relationship between the two variables. The design is descriptive because it will describe the current perceived levels of the variables within the selected company, and analytical because it will examine whether variation in communication efficiency is associated with variation in schedule performance. The study will be conducted as a case study of Al-Riyadah Company in Dammam.

The study population will include employees who are directly involved in project work at Al-Riyadah Company in Dammam. This may include project managers, project engineers, planners, site engineers, supervisors, coordinators, quality personnel, procurement personnel, and other employees who participate in planning, executing, monitoring, or reporting project activities. Employees with no direct exposure to project communication or scheduling processes will not be included. If the number of eligible employees is manageable, the study will attempt to use a census approach by inviting all eligible employees. If this is not practical, a proportionate stratified sample will be selected so that relevant project roles are represented.

Data will be collected through a structured self-administered questionnaire written in clear English and, where needed, translated or supported by an Arabic version to ensure comprehension. The questionnaire will contain three sections: demographic and work-related information; items measuring communication efficiency; and items measuring project schedule performance. Most variable items will use a five-point Likert scale ranging from strongly disagree to strongly agree. Before the main distribution, the questionnaire will be reviewed by

academic and project-management experts to assess content relevance and clarity. A pilot test with a small group of eligible respondents may be used to identify unclear wording and to assess preliminary reliability.

The independent variable, communication efficiency, will be measured through statements related to the clarity, completeness, accuracy, timeliness, accessibility, feedback, and channel suitability of project information. The dependent variable, project schedule performance, will be measured through statements related to meeting planned milestones, completing activities on time, receiving early warning of deviations, managing schedule changes, and minimizing delays caused by coordination issues. The questionnaire will be adapted to the company's terminology and project context without changing the underlying meaning of the constructs.

Data analysis will be carried out using appropriate statistical software. Descriptive statistics, including frequencies, percentages, means, and standard deviations, will be used to describe respondents and assess the perceived levels of the study variables. Reliability analysis will be conducted for multi-item scales. Pearson correlation analysis will be used to examine the direction and strength of the relationship between communication efficiency and project schedule performance. Multiple regression analysis will be used to test the effect of overall communication efficiency and its dimensions on schedule performance, subject to the assumptions required for the selected analysis. The hypotheses will be accepted or rejected based on the specified level of statistical significance.

The study will follow ethical research principles. Participation will be voluntary, and respondents will be informed about the purpose of the study, the intended use of the data, and their right to withdraw before submitting the questionnaire. Individual responses will be treated confidentially and reported only in aggregate form. The study will not disclose personal information or commercially sensitive project details without the company's permission. These procedures are consistent with the emphasis on transparent research design and ethical data collection described by Creswell and Creswell (2018) and Saunders, Lewis, and Thornhill (2019).

1.9. Scope of The Study

The study is limited geographically to Al-Riyadah Company in Dammam, Saudi Arabia. It is limited organizationally to employees who are directly involved in project-related activities and who can provide informed perceptions of communication processes and schedule performance. The study does not seek to generalize statistically to all companies in Dammam or Saudi Arabia; instead, it provides evidence from the selected case-study setting.

The study is limited substantively to the relationship between communication efficiency in projects and project schedule performance. It does not attempt to examine all possible causes of

schedule delay, such as financing, weather, contractual disputes, supplier performance, or technical design issues, except where employees perceive that communication influences the management of those issues. The independent variable is communication efficiency, while the dependent variable is project schedule performance.

The study is limited temporally to the period of data collection and analysis during 2026. The findings will reflect respondents' perceptions during that period and may be influenced by the specific types, stages, and conditions of projects active at the time of the survey.

1.10. The Suggested Project Structure

The proposed project is organized into two chapters followed by a list of references. Chapter One presents the research background, research problem, theoretical and practical gaps, research significance, research questions, objectives, hypotheses, research model, methodology, scope, and the proposed structure of the study.

Chapter Two presents the literature review. It begins with an introduction, then discusses the independent variable of communication efficiency in projects and the dependent variable of project schedule performance. The chapter then reviews the relationship between the two variables and concludes by summarizing the main literature relevant to the proposed study. The final section of the project provides the references used in developing the proposal.

2.Chapter 2: Literature Review

2.1. Introduction

This chapter reviews literature relevant to communication efficiency in projects and project schedule performance. The purpose of the review is to establish the conceptual basis for the proposed study, identify the dimensions used to measure the independent and dependent variables, and explain why an effect between them is expected. The chapter begins with communication efficiency as the independent variable, then examines project schedule performance as the dependent variable, and finally discusses the relationship between the two variables.

The review draws on project-management standards and empirical studies that address communication, team coordination, project performance, and scheduling. The literature indicates that project communication is both a formal management process and an interpersonal capability. It includes planning how information will be generated and distributed, but it also includes ensuring that recipients understand the information and can respond in time. In the same way, schedule performance is not simply the possession of a Gantt chart or a baseline; it depends on the continuous collection of reliable progress information and the coordinated management of changes.

2.2. The independent variable

Communication in a project context refers to the purposeful exchange of information, meaning, requests, decisions, and feedback among people who influence or are influenced by the project. Project participants may include sponsors, clients, project managers, engineers, planners, supervisors, contractors, suppliers, and team members. Communication occurs through formal mechanisms such as schedules, reports, meeting minutes, dashboards, specifications, and change notices, as well as informal conversations, telephone calls, instant messages, and site discussions. The effectiveness of communication depends not only on whether a message is sent but also on whether it is understood, accepted, and converted into an appropriate action.

Communication efficiency is a narrower concept than communication frequency. A team may exchange a high volume of messages and still experience confusion, repetition, delayed decisions, or unclear ownership. For the purposes of this study, communication efficiency is defined as the extent to which project information is delivered clearly, completely, accurately, promptly, through an appropriate channel, and with adequate opportunity for feedback and confirmation. Efficient communication reduces the effort required to obtain needed information and reduces the risk that project participants will act on different interpretations of the same issue.

PMI (2021) treats communication as an important component of stakeholder engagement and project work because project teams must tailor information to stakeholder needs and use appropriate communication methods. The ability to tailor communication is important because different stakeholders require different levels of technical detail, different reporting frequencies, and different formats. A site supervisor may need immediate, task-specific direction, while senior management may need a concise summary of risks, milestones, and decisions. Efficiency is improved when the communication method matches the urgency, complexity, and audience of the message.

Henderson (2004) distinguishes between encoding and decoding competencies in project management. Encoding concerns how a manager expresses or transmits a message, while decoding concerns how the manager interprets information received from others. This distinction is important because communication problems can arise at either stage. A message may be poorly written, overly technical, incomplete, or sent through an inappropriate channel. Conversely, a manager may fail to seek clarification, misunderstand feedback, or overlook information that should trigger action. The study reported an association between communication competencies and team members' satisfaction and productivity, suggesting that communication quality has implications for the way teams perform their work.

Zulch (2014) presents communication as a foundation for the principal areas of project management. The study highlights the interconnection between communication and areas such as scope, time, cost, quality, risk, and stakeholder management. In practical terms, communication links these areas by enabling the team to share requirements, report progress, identify risks, coordinate resources, and make decisions. This position supports the present study's focus on schedule performance: if time-related information is not exchanged efficiently, the schedule cannot function as a reliable coordination and control tool.

Ziek and Anderson (2015) extend the discussion by emphasizing communication as dialogue. Dialogue involves shared meaning, listening, questioning, reflection, and response. It is especially relevant in projects where information is uncertain, where different specialties use different technical languages, or where decisions require agreement among several stakeholders. A dialogic approach can help project teams surface assumptions before they become sources of delay. It can also improve the quality of feedback because employees may be more willing to raise concerns when communication is treated as a two-way process rather than as a top-down instruction mechanism.

The literature also recognizes the role of technology. Digital platforms can store documents, distribute updates, support virtual meetings, record decisions, and provide visibility into tasks and milestones. However, technology must be usable and supported by management to improve performance. Afridi et al. (2023) found that digital communications affected project efficiency and that ease of use and top-management support shaped this relationship. The implication for project organizations is that introducing a tool is not enough; managers must define its purpose, promote adoption, clarify expectations, and make sure the tool supports rather than duplicates existing communication processes.

In this study, communication efficiency will be measured through five related dimensions. The first is clarity and completeness, meaning that project instructions, reports, and decisions are understandable and contain the information needed for action. The second is timeliness, meaning that information reaches the relevant person early enough to support decisions and prevent disruption. The third is feedback and confirmation, meaning that recipients can ask questions, confirm understanding, and receive a response. The fourth is channel suitability, meaning that the selected communication method fits the urgency, complexity, and audience of the message. The fifth is coordination and information sharing, meaning that relevant project participants receive consistent updates and can align their work with current project conditions.

These dimensions are suitable for an organizational survey because they can be assessed through employees' direct experience. For example, employees can report whether they receive clear task instructions, whether schedule updates are communicated quickly, whether they can

obtain clarification when necessary, and whether different departments receive consistent information. Together, the dimensions provide a practical representation of communication efficiency that can be compared with perceptions of project schedule performance.

2.3. The dependent variable

Project Schedule Performance:

Project schedule performance refers to the extent to which project activities, milestones, and final deliverables progress in accordance with the approved schedule or with properly authorized revisions to that schedule. It is a key dimension of project management because time is linked to resource availability, customer expectations, contractual obligations, cost control, and the coordination of dependent tasks. A project can have a well-designed schedule at the planning stage and still perform poorly if the schedule is not updated with reliable information or if the team does not act promptly when deviations occur.

According to PMI (2011), a project schedule model represents how and when the project will deliver its scope and can support communication, stakeholder expectations, performance reporting, coordination, risk detection, and resource planning. This view makes schedule performance a dynamic management process rather than a single final outcome. A schedule must be baselined, monitored, updated, and communicated so that team members can see the relationships among activities and understand the consequences of changes. The schedule becomes valuable when it is used to guide action and enable early intervention, not when it is treated only as a document prepared at the beginning of the project.

A common time-based measure of project performance is adherence to planned dates. However, schedule performance can be assessed more comprehensively through several indicators. These include completing activities by their planned or approved revised dates, meeting key milestones, identifying deviations early, communicating the likely impact of changes, responding quickly to constraints, and avoiding delays that result from poor

coordination or rework. These indicators are particularly useful in a perception-based survey because employees may not have access to detailed schedule records but can assess whether project processes generally support timely execution.

Schedule performance is affected by both technical and managerial factors. Technical issues may include design complexity, changes in requirements, resource availability, productivity, procurement, and external conditions. Managerial factors include planning quality, monitoring, decision-making, risk management, stakeholder engagement, and communication. The schedule is therefore an integrative project tool: it brings together information about scope, resources, costs, dependencies, and risks. For this reason, a communication weakness in one area can quickly create a schedule consequence in another. For example, a late approval may postpone procurement; a late procurement update may delay installation; and the delayed installation may affect testing and final handover.

Schedule control requires trustworthy progress information. Project managers need to know which activities have started, which activities are complete, what work remains, what constraints have arisen, and whether the current forecast differs from the baseline. Inaccurate or delayed status updates can create a false sense of progress and prevent early action. Conversely, transparent and timely reporting can help a team revise work sequences, reallocate resources, accelerate selected activities, or communicate realistic expectations to clients and senior management. This is why communication efficiency is expected to influence schedule performance even when other delay factors are present.

The present study operationalizes project schedule performance through five indicators. The first is milestone adherence, which refers to the extent to which important planned dates are met. The second is timely completion of activities, which reflects whether work packages are completed according to the project plan or authorized revision. The third is early identification of schedule deviations, which reflects whether delays and risks are recognized before they become critical. The fourth is responsiveness to changes, which reflects whether the team can communicate and implement necessary schedule adjustments quickly. The fifth is reduction of coordination-related delays, which reflects whether the project avoids delays caused by unclear information, missing approvals, conflicting instructions, or poor handovers.

It is important to distinguish schedule performance from overall project success. Overall success may include financial returns, customer satisfaction, quality, safety, strategic value, and long-term benefits. A project may be delivered on time but fail to meet other success criteria, and a project may be delayed for reasons beyond the direct control of the project team. The present study does not claim that communication is the only determinant of the schedule. Instead, it examines whether more efficient communication is associated with stronger performance on schedule-related indicators within the selected company.

2.4. The relationship between the independent and the dependent variables

The relationship between communication efficiency and project schedule performance is based on the role of information in coordinating interdependent work. A project schedule specifies what should happen, when it should happen, and how activities depend on one another. To execute the schedule, team members need continuing information about priorities, changes, progress, constraints, and decisions. Efficient communication enables that information to move quickly and accurately among the people who need it. When the information flow is slow or unclear, the practical value of the schedule declines because team members cannot reliably align their activities with the latest project condition.

Clarity and completeness of communication are expected to support schedule performance by reducing ambiguity. Clear task descriptions, complete instructions, and explicit responsibilities can reduce rework and avoid time lost to repeated clarification. The lack of clarity can be especially damaging when tasks are technically specialized or sequentially dependent. A team member who receives an incomplete drawing, an unclear approval, or a vague priority may delay work or proceed incorrectly. In either case, the schedule can be affected. Henderson's (2004) findings regarding communication competencies support the importance of creating and interpreting messages effectively within project teams.

Timeliness of communication is also central to schedule performance. Project information is often time-sensitive: a decision, risk warning, delivery update, or change notice may have value only if it is communicated before a related activity begins. Timely updates make it possible to take preventive action, revise the sequence of work, adjust resource allocations, or inform stakeholders about realistic impacts. When an update arrives after a critical decision point, the organization may be forced into reactive problem-solving. PMI's scheduling guidance recognizes that schedule models are updated to reflect progress and changes, and that they support early detection of risks or problems (PMI, 2011). Timely communication is the mechanism that allows these updates and responses to occur.

Feedback and confirmation create a further link between communication and schedule performance. In a project environment, sending an instruction does not guarantee that it has been understood or accepted. Feedback enables recipients to clarify uncertain points, while confirmation helps managers verify that the right person has received and understood the message. This can be important for critical activities, change requests, safety-related instructions, and cross-functional handovers. A feedback process also gives employees an opportunity to report emerging constraints before those constraints become visible in formal schedule reports.

Channel suitability influences the speed and reliability of communication. Formal reports and document-management systems may be appropriate for approvals, records, specifications, and baseline updates, while a quick telephone call or meeting may be more appropriate for an urgent operational issue. Problems arise when an important message is delivered through a channel that the recipient does not check, when multiple versions of the same document circulate, or when

informal decisions are not recorded for the wider team. Communication efficiency therefore requires a clear protocol that identifies where official information is stored, how urgent issues are escalated, and how decisions are communicated to affected stakeholders.

Coordination and information sharing are particularly important in projects with many roles and interfaces. Project teams often depend on work performed by others: procurement must respond to design needs, site teams must coordinate with planners, and management must make decisions based on reliable progress reports. Chen (2021) found that communication was related to capital-project performance through technical and managerial competencies, supporting the idea that communication contributes to the organizational capability needed for project execution. Similarly, Diallo and Thuillier (2005) identify communication and trust as relevant to the success of development projects, indicating that communication has both technical and relational dimensions.

Empirical research provides additional support for the expected relationship. Afridi et al. (2023) show that digital communications can influence project efficiency when supported by ease of use and top management. Aziz (2022) concludes that communication is important to project success in the context examined. These studies do not eliminate the influence of other schedule factors, but they demonstrate that communication is a meaningful managerial variable rather than a peripheral activity. The present study builds on this literature by focusing specifically on communication efficiency and schedule performance within Al-Riyadah Company in Dammam.

Based on the reviewed literature, the proposed model expects a positive relationship: as communication becomes clearer, more timely, more responsive, better matched to stakeholder needs, and more coordinated, project schedule performance is expected to improve. This expectation is expressed in the research hypotheses. The statistical analysis will determine whether the data collected from the company support the proposed relationship and which dimensions of communication efficiency appear most influential in the selected context

2.5. Conclusion

This chapter reviewed the literature related to communication efficiency in projects and project schedule performance. Communication efficiency was defined as the timely, clear, complete, accurate, accessible, and feedback-supported exchange of project information through suitable channels. The review showed that project communication includes both formal management processes and interpersonal competencies, and that it supports coordination, decision-making, stakeholder engagement, and issue resolution.

Project schedule performance was defined as the extent to which activities and milestones progress in accordance with planned or authorized revised dates, supported by early identification of deviations and effective responses to change. The literature indicates that the schedule is a dynamic coordination and control tool that depends on current, reliable information. The review therefore supports the proposed expectation that communication efficiency has a positive effect on project schedule performance. The next stage of the study will test this relationship empirically through a questionnaire administered to employees involved in projects at Al-Riyadah Company in Dammam.

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