HIGHLIGHTING APPROACHES TO LEADERSHIP STYLE IN PROJECT MANAGEMENT:
THE NEED FOR A BROADER RESEARCH APPROACH TO THE CONTEXT-RELATED
USE OF LEADERSHIP STYLES

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Abstract
A project manager’s leadership style has a considerable impact on project success. However, there is no one best appropriate leadership behavior. The characteristics of the project and the organizational context determine which leadership style could be appropriate in different situations. To provide a clear picture of the complexity of contextual features, leadership style, and its relation to project success, there is a need for a systematic review of leadership style–related papers focusing on project management. This paper has two aims: to provide a content analysis of previous papers to determine which leadership style approaches were studied in project management; and to provide a detailed content analysis of previous findings of project management studies in terms of matching project characteristics and organizational features with the appropriate leadership style of the project manager. The findings of this paper give a comprehensive analysis of previous results, and also highlight the weaknesses in terms of neglected aspects of conceptualization and deficiencies. Our results indicate the lack of comprehensive context-related studies of project manager’s leadership. Thus, there is a need for research examining project characteristics and contextual features in detail to identify the appropriate project managers’ leadership style by means of deductive reasoning.

Keywords: project manager, leadership style, project characteristics, contextual features, content analysis

1 INTRODUCTION
Successful implementation of projects is essential in implementing corporate strategic objectives. However, projects are temporary forms of organizing, and they differ from permanent organizational arrangements and processes in several ways. Because of the inherent characteristics of projects as temporary organizations (e.g., novelty, uniqueness, uncertainty, complexity, and low standardization), further to the project manager’s skills and competencies, the leadership style has a considerable impact on project success. Several studies (Prabhakar, 2005; Müller & Turner, 2007; Yang, Wu, & Huang, 2013; Tabassi et al., 2016; Bhatti, Kiyani, Dust, & Zakariya, 2021) analyzed the relationship between the project manager’s leadership style and project performance. Most of these studies reinforce that an appropriate leadership style facilitates successful project completion in general (Prabhakar, 2005; Müller, & Turner, 2007; Yang, Wu, & Huang, 2013; Tabassi et al., 2016). However, there is no one best appropriate leadership behavior. Instead, the appropriate leadership style should be fitted to the characteristics of the project and of the organizational context. Bearing this in mind, researchers (Müller & Turner, 2010; Raziq, Borini, Malik, Ahmad, & Shabaz, 2018; Kabore, Sane, & Abo, 2021; Nauman, Musawir, Munir, & Rasheed, 2022) also analyzed the relationship between leadership style and project success in a more specific manner.

Previous studies utilized various leadership style approaches, applying often overlapping frameworks, and analyzed numerous different attributes pertaining to project characteristics and contextual features. Nevertheless, the conceptualizations of the analyzed attributes exhibited substantial differences. To provide a comprehensive basis for under-
understanding a project manager’s leadership style, the contextual elements associated with it, and the consequences in terms of project performance, a systematic review of the relevant literature focusing on leadership style approaches in project management is imperative. This paper has two aims: to provide a content analysis of these published papers to determine leadership style approaches considered in project management studies; and to conduct an associated content analysis to highlight previously published results regarding the relationships between project characteristics and organizational features, and the appropriate leadership style.

Our findings provide a systematic overview of previously published papers, presenting not only the studies of different leadership style approaches, but also the considered characteristics and environmental aspects of the project. In this way, our findings support human resource professionals in understanding the interdependencies between contextual features and different leadership styles. This understanding can help them find the most appropriate project manager for a specific project. Additionally, the results of the study can assist project managers in adapting their leadership style to the required leadership behavior based on the specific project characteristics and context.

Furthermore, based on the results, we can establish further studies and highlight the basics of a framework that might contribute to identifying the best-suited project management leadership style in a context-related manner. This framework is constructed using a deductive approach. In the proposed framework, the deductive approach is based on the relationships between inherent project characteristics and features of different leadership styles (along with the underlying personal characteristics), and on the relationships between contextual features and different leadership styles.

The proposed framework has significant practical management implications, because it facilitates matching project managers’ leadership styles with the unique characteristics and contextual features of a given project. It has the potential to support project managers and personnel departments in comprehending these interdependencies in order to facilitate the appropriate selection and development of project managers. Further research based on this framework could assist human resource departments and project management offices in recruiting and selecting project managers who can exhibit a leadership style customized to the specific attributes of a project and its environment. Consequently, the framework’s utilization might advance project success.

2 LITERATURE REVIEW

As far as the leadership style of a project manager having a considerable impact on the success of a project, there is a need to provide a short overview of understanding the project success, and the underlying concepts of projects and project management.

2.1 Understanding the Concept of Projects, Project Management, and Project Success

In for-profit and non-profit organizations projects, are common operations. Organizations fulfill the requirements of different clients or realize their development, innovation, or other future plans via projects. However, the implementation of projects differs from standard operational processes in many ways. Because of their novelty, complexity, uniqueness, and time and cost constraints, these tasks are characterized by high uncertainty, require more flexibility, and allow low standardization (Koster, 2010). A project is not only a complex and “temporary endeavour undertaken to create a unique product, service or result” (Project Management Institute, 2021, p. 4), but also a temporary organization (Lundin & Söderlund, 1995) and a strategic building block (Cleland, 1994). According to Görög (2016) this broader concept of a project includes a one-time, unique, and complex sequence of activities, characterized by a definite outcome and by time and cost constraints, by means of which corporate strategic objectives can be realized, and which is carried out by a temporary project organization.

This multifaceted concept of a project requires a broader approach to project management itself. The Project Management Body of Knowledge (PMBOK) published by the Project Management Institute (2021) emphasizes the management of project activ-
ities and the guiding of project work; however, it fails to mention the role of project management in realizing strategic objectives. Project management based on the comprehensive approach includes the management of implementation processes, temporary organizations, and “the achievement of beneficial changes implied in the organizational strategic objectives” (Görög, 2016, p. 1662). This broader approach to the concept of project management implies a very complex project manager role. The project manager is responsible for planning the project activities; realizing the plans; delivering the desired outcome; leading, motivating, and facilitating the team members; managing project stakeholders; and so on. Consequently, based on this comprehensive approach, the project manager has a considerable effect on the successful implementation of a project (Cleland, 1994; Turner, 2009), including the long-term success of an organization.

The phenomena of project success evolved considerably in line with the conceptual development of projects and project management. In recent decades, researchers analyzed various aspects of project success, including how projects are implemented; how their outcomes are evaluated; and how the environment, or organizational context in which they are executed, can be characterized. (Papke-Shields, Beise, & Quan, 2010). Based on these studies the so-called input–output-oriented view of project success has been formulated (Blaskovics, 2014). The concept of input concentrates on facts and circumstances that contribute to the successful implementation of the project (Lim & Mohamed, 1999). In other words, these factors are the success factors “that must be given special and continual attention to bring about high performance” (Boynton & Zmud, 1984, p. 17). The concept of output focuses on the evaluation of project outcome by using different base values and requirements. These requirements are the success criteria, based on which the success of a project can be evaluated.

The classical and most common used success criteria is the “project triangle” (time, cost, and quality), because the fulfillment of these requirements can be assessed objectively (Judgev & Müller, 2005). Due to the broader approach to project sand project management, during the last 20 years several studies comprehensively evaluated project success by broadening the range of success criteria (Atkinson, 1999; Baccarini, 1999; Cooke-Davies, 2004). Görög (2013) developed a hierarchical model for the evaluation of a project’s success which encompasses three types of criteria in line with the broader concept of projects and project management: the traditional project triangle (time, cost, and quality), which measures the efficiency of project implementation; client satisfaction, which measures the effectiveness of the completed project outcome, and the benefit to the achievement of underlying strategic objectives; and the stakeholder satisfaction, which includes the satisfaction of both internal and external stakeholders.

Parallel to the evolution of success criteria, researchers attempted to identify the critical success factors of project implementation, focusing on the broader approach to projects and project management. Whereas earlier studies concentrated on determining factors that influence the realization of project objectives in terms of schedule, cost, and performance (Baker, Murphy, & Fisher, 1988; Pinto & Slevin, 1988), later publications attempted to classify these factors and develop a consistent model of success factors (Cooke-Davies, 2002; Leung, Ng, & Cheung, 2004), or identified the most popular success factors by analyzing previous publications (Fortune, & White, 2006). In addition to the identification of success factors, more studies focused on determining the relationships between success criteria and success factors based on empirical surveys (Papke-Shields et al., 2010; Yang, Huang, & Wu, 2011, Cserháti & Szabó, 2014). According to the results of these studies, relationship- and human-oriented success factors (e.g., communication, project leadership, human resource management, cooperation with stakeholders, and cohesion of the project team) advanced, and played a crucial role in client and stakeholder satisfaction. However, the role of task- and process-oriented success factors should not be neglected, because these factors have a considerable impact on the fulfillment of the project triangle (Doloi, Iyer, & Sawnney, 2011).

As the broader approach to project success advanced, more studies analyzed the impact of a project manager’s leadership style or leadership competencies on project success, and several of these studies reinforced the role of appropriate
leadership behavior in achieving project success. Based on interviews and an empirical survey with project managers, Müller and Turner (2007) determined that the leadership style of a project manager influences project success. Gruden and Stare (2018) reinforced the role of leadership competencies in project performance. According to Yang et al. (2013) and Bhatti et al. (2021), project managers’ leadership style improves teamwork, trust in leaders, knowledge sharing, and project performance, and thereby facilitates stakeholder satisfaction. However, the effectiveness of leadership behavior depends highly on the characteristics of the project and its environmental or organizational context. Thus, there is not only one suitable leadership behavior, because it is influenced by the aforementioned factors. Based on this notion, several researchers (Agarwal, Dixit, Nikolova, Jain, & Sankaran, 2021; Blaskovics, 2014; Kabore et al., 2021; Müller & Turner, 2010; Raziq et al., 2018) have considered factors that relate to the required leadership style of project managers. They studied factors such as project type, complexity, duration, uncertainty, type of contract, team size, goal clarity, project importance, organizational culture, and knowledge sharing. These studies promoted research on the impact of leadership styles on project success in a relatively specific contextual manner, because they analyzed a certain part of project characteristics and contextual features. However, they did not determine the most important factors to be taken into consideration during the specification of the required leadership style of project managers.

Both project characteristics and contextual features are essential aspects to consider when determining the appropriate leadership style for a project manager. However, there are no well-established models in the project management literature for classifying these aspects. Crawford, Hobbs, and Turner (2006) developed a state-of-the-art classification system that includes different project attributes, such as application area, complexity, strategic importance, contract type, life-cycle stage, and culture. Görög (2013) differentiated two inherent project characteristics: uncertainties, and interdependences. Despite these efforts, there is no broadly accepted approach among authors, and further research is needed in this respect.

2.2 Understanding the Concept of Leadership, Leadership Theories, and Leadership Styles

To develop an elaborate study of project managers’ leadership styles, we first define the phenomena of leadership, leadership theory, and leadership style, which are related but distinct concepts. Blake and Mouton (1985, p. 9) considered leadership to be “the process of achieving organization purpose through the efforts of people, results in some people attaining authority to set direction and coordinate effort; that is, to exercise the responsibility for the activities of others.” The basis of leadership is the influence upon other individuals to act “to perform tasks or to solve problems in order to attain the goals of the organization” (Andersen, 2013, p. 5). On the other hand, leadership theories are frameworks that attempt to determine how leadership works and what makes an effective leader. These theories provide a systematic way of understanding the complexities of leadership, and offer insight into how leaders can enhance their effectiveness (Yukl, 2013). Finally, leadership style refers to the approach that a leader uses to guide and influence the team or organization. According to Northouse (2001), leadership styles are the specific ways in which a leader interacts with their followers and achieves their goals.

Within this influencing process, authors have emphasized the need for a dynamic relationship between leader and followers, which correlates highly with the characteristics of leaders and followers, and to “the context in which the influencing process occurs” (Antonakis, Avolio, & Sivasubramaniam, 2003, p. 5). There is an agreement among academics that the concept of leadership style is understood in many different ways. In other words, researchers differentiate a confusingly high number of the leadership styles.

Based on Northouse (2001) and Buchanan and Huczynski (2004), Table 1 summarizes the most important milestones of leadership theories.

Early studies (Stogdill, 1948, 1974) focused on personality traits of leaders that can influence or explain the behavior of leaders and followers. Researchers of trait theory focused on the analysis of physical factors, knowledge, and abilities, as well as on personality features of leaders, and identified the
specific traits of effective leaders. However, characteristics defined as crucial traits by one researcher were not confirmed by others (Hughes, 2005). Conflicting results of trait theory inspired researchers to study leaders’ behavior and its organizational effects. This leadership approach assumes that a leader’s behavior influences followers’ work, and, through the followers’ effectiveness, the performance of the whole organization.

Based on behavioral characteristics and the relationship of leaders and followers, researchers described typical behavioral styles of leaders. Lewin, Lippitt, and White (1939) identified the autocratic, democratic, and laissez-faire leadership styles based on observation of a group of children. The autocratic leader tends to direct and control subordinates, and centralizes authority. The democratic leader facilitates followers’ participation and delegates authority to them. The laissez-faire leader is a passive character and does not take part in the actions of the group, which results in unproductive work and disengaged co-workers. Other studies (Bales, 1950; McGregor, 1960) identified two fundamental styles of leader behavior. The employee-centered leader focuses on the individual needs and opinions of followers, cohesion and commitment of the team, and delegation of authority. The job-centered leader concentrates on goals and performance, specifies the tasks, and controls the implementation. Based on these two main leadership behaviors, Blake and Mouton (1964) developed the managerial grid, in which the two dimensions (concern for people, and concern for production) do not exclude each other. They considered the concern for people and the concern for production to be equally essential for effective leaders. Based on these two dimensions, they compiled a grid in which five categories of leadership behavior can be differentiated. The behavioral studies identified the main leadership styles and their effectiveness and determined the importance of human orientation. However, it became increasingly clear that the study and prediction of effective leadership are more complex. There is not only one right way of leading; a leader should adapt to the internal and external features of the situation.

Accordingly, contingency theories took into consideration the characteristics of the environment and tried to predict in which situations each kind of leadership behavior can be effective. Fiedler’s (1967) contingency theory proposed that leadership behavior is influenced by the leader-member relationship, the degree of task structure, and the power derived from the leader’s position. Hersey and Blanchard (1977) emphasized the role of subordinates. Depending on their maturity and motivation, task- or human-oriented leadership behavior can be sufficient.

Table 1: Milestones of leadership theories

<table>
<thead>
<tr>
<th>Theory</th>
<th>Focuses on identifying the characteristics and traits of effective leaders. Leaders are innate leaders. (Stogdill, 1948, 1974)</th>
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</thead>
<tbody>
<tr>
<td>Trait theory</td>
<td>Focuses on the behaviors, actions, and skills of leaders. Leaders can be developed. (Lewin et al, 1939; Bales, 1950; McGregor, 1960; Blake &amp; Mouton, 1964)</td>
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<tr>
<td>Behavioral theory</td>
<td>Focuses on a leaders adaptation to their environment. Leaders are able to adapt their leadership style to situational factors. (Fiedler, 1967; Hersey &amp; Blanchard, 1977)</td>
</tr>
<tr>
<td>Situational theory</td>
<td>Focuses on one aspect of leadership is not sufficient. Focuses on the interactions between leaders, followers, the situation, and the context as a whole system. (Bass &amp; Avolio, 1994; Goleman, 1995)</td>
</tr>
<tr>
<td>New leadership</td>
<td>Focuses on identifying the characteristics and traits of effective leaders. Leaders are innate leaders. (Stogdill, 1948, 1974)</td>
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</tbody>
</table>

Source: authors’ compilation based on Northouse (2001) and Buchanan and Huczynski (2004).
leadership theories in publications of the 2000s: transformational leadership; emotions and emotional intelligence; authentic leadership; shared leadership; ethical leadership; organizational justice; and complexity, context, and leadership.

There are many different theories of leadership (such as authentic leadership, ethical leadership, empowering leadership, etc.), in which emphasis is mostly on a narrower aspect of a leader’s behavior or personality traits, or on the development of a leader’s personality. Although there is a substantial relationship between leaders’ personality and the adopted leadership style, studies, & & found no or only weak correlations between the leaders’ personality and their performance as a leader (Dulewicz & Higgs, 2003; Goleman, Boyatzis, & McKee, 2002). During the last 20 years, most theories were based on the human orientation of leaders; however, goal or task orientation also appeared in some concepts (e.g., transactional theory, and path–goal theory). There are various leadership style approaches, and several internal and external factors are interrelated with the appropriateness of using these leadership styles. When studying project managers’ leadership style, we need to consider how the different leadership styles of project managers match the characteristics of projects, project team members, and different contextual factors.

3 METHODOLOGY

In this paper we applied content analysis of previous studies discussing different leadership style approaches in project management. We conducted a systematic review of leadership style–related papers in project management to determine the presence of leadership style approaches in project management studies. We also conducted a detailed content analysis of selected papers to collect and systematize previous results regarding the correspondence of project characteristics and project context with the appropriate leadership style of the project manager.

For the analysis we selected leadership style–related papers in project management journals from the Web of Science database. During the selection process we applied the following criteria:

- Keywords: project & leadership style
- Fields: all fields
- Document type: article
- Publication year: 2002–2021

Our selection process resulted in 32 relevant papers. Most of the papers (19) were after 2017, half of them (16) were published in the International Journal of Project Management, and five of the articles were written by Ralf Müller and his co-authors.

A detailed content analysis of the selected papers was carried out. We collected information about the applied leadership style approaches as well as the details and results of published research, where the association of project characteristics and contextual features with the appropriate leadership style of project manager were studied.

4 FINDINGS

In the 32 relevant papers, we analyzed the applied leadership style approaches as well as their findings regarding the relationships between project characteristics and contextual features, and leadership styles. Most studies applied leadership style approaches based on the transformational and transactional (15) leadership theory, the competency theory (6) and the shared or balanced leadership approach (6) to study the leadership styles of project managers. Four papers analyzed task- and human-oriented behavior, and two articles analyzed the emotional intelligence (EI) of project managers. In some cases, the situational (1), empowering (1), ethical (1), and authentic (1) leadership approaches were considered. Comparing these results with the clusters of leadership approaches identified by Batistić et al. (2017) shows that in project management papers, more or less the same leadership theories came to the fore. Furthermore, in project management studies, the competency theory was considered widely; this theory involves the emotional (EQ), intellectual (IQ), and managerial (MQ) competencies of leaders, and distinguishes three different leadership styles: the goal oriented, involving, and engaging styles (Dulewicz & Higgs, 2005).
As mentioned previously, to identify the effective leadership style of project managers, we need to take into consideration the characteristics of the project and of the organization itself. The required behavior of a project leader should be matched with the type or complexity of the project, the degree of uncertainty, or the strategic importance of the project. We thoroughly analyzed which of these factors had been studied previously, and the results that were determined.

Most of the analyzed papers (9) studied the leadership style with respect to a certain project type or industry sector. Based on the results, the transformational leadership style is appropriate for international development projects (Kabore et al., 2021), sustainable product development (SNPD) projects (Wang & Yang, 2021), and IT and software (SW) development projects (Nau- man et al., 2022), although research shows inconsistent results in the case of construction projects. Based on the responses from 345 managers in the construction industry, Maqbool, Sudong, Manzoor, and Rashid (2017) found that the transformational leadership of project managers ensures higher project success. Tabassi et al. (2016) reported that the transformational leadership style has an insignificant effect on the success of sustainable construction projects. Furthermore, some papers reinforced the positive relationship between the project manager’s emotional intelligence and project success in the case of integrated project delivery situations (Zhang, Cao, & Wang, 2018), sustainable product development projects (Wang & Yang, 2021), and construction projects (Maqbool et al., 2017). One paper reinforced the positive connection between ethical leadership and project success in IT and SW development projects (Bhatti et al., 2021). Another paper found the dominance of a democratic leadership style in Scandinavian projects compared with Australian and Canadian projects, but it did not find significant differences within the industry sector (Drouin, Müller, Sankaran, & Vaagaasar, 2018).

In terms of complexity, published articles do not provide consistent results. Müller and Turner (2010) concluded that high-complexity projects require high managerial, intellectual, and emotional competencies, whereas Podgorska and Pichlak (2019) reported the importance of only managerial competencies. However, the authors of both papers applied the same leadership style approach (competency theory) and a simplified categorization of complexity (low, medium, and high complexity). Princes and Said (2022) analyzed the complexity in terms of technology and organization, and reported that the situational leadership style facilitates financial sustainability. Other studies (Raziq et al., 2018; Lai, Hsu, & Li, 2018) investigated the uncertainty and goal clarity of projects. Based on their results, a relation-oriented leadership style enables goal clarity, and a transformational leadership style is more effective in projects with high uncertainty.

Considering the characteristics of project teams and methods, a distributed leadership style is appropriate for agile teams (Agarwal et al., 2021), whereas in highly virtual teams a relation-oriented leadership behavior may be effective (Nauman et al., 2022). Table 2 summarizes the findings of previously published papers regarding the relations between various project characteristics and leadership styles of project managers. Because of the lack of a unified and recognized categorization of project characteristics in the literature, I relied on terms applied by authors. The first part of Table 2 presents the findings in terms of different project types. The second part of Table 2 summarizes previous results in terms of certain project characteristics, such as project complexity, uncertainty, and other attributes.

By analyzing the contextual features of projects, Podgorska and Pichlak (2019) studied the competencies required of leaders in terms of the strategic importance of the project. They found that in renewal projects, the IQ of a project manager has an important role, whereas in repositioning and mandatory projects, EQ competencies are essential. Müller and Turner (2010) differentiated the significance of competencies depending on contract type and determined the importance of IQ and MQ competencies in fixed-price projects compared with other contract types (remeasurement, and alliance). Agarwal et al. (2021) suggested the application of a distributed leadership style in flexible, collaborative organizations with advanced knowledge-sharing practices, based on the analysis of eight project-based organizations. Chaudry, Raziq, Saeed, Sajjad, and Borini (2019) studied the correlation between organizational structure and leadership styles, and found the people-oriented style to be appropriate for a matrix structure. Table 3 presents the findings of previously published papers and highlights the suggested leadership style versus certain contextual features, which should be taken into consideration in the selection of leadership style.
## Table 2: Project type and project characteristics analyzed in previous studies

<table>
<thead>
<tr>
<th>Literature considering project types</th>
<th>Study</th>
<th>Industry environment considered</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kabore et al., 2021</td>
<td>International development projects</td>
<td>Transformational leadership has a direct positive influence on the success of IDPs.</td>
<td></td>
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<tr>
<td>Zhang et al., 2018</td>
<td>Integrated project delivery</td>
<td>Leadership styles link the relationship between project leaders’ EIs and collaboration satisfaction. These projects require leaders with high levels of EI to improve collaboration satisfaction.</td>
<td></td>
</tr>
<tr>
<td>Wang &amp; Yang, 2021</td>
<td>Sustainable product development (SNPD) projects</td>
<td>Emotional stability, openness to experience, and transformational leadership style of PM play an important role in SNPD projects’ success.</td>
<td></td>
</tr>
<tr>
<td>Drouin et al., 2018</td>
<td>Industry sector and specific countries</td>
<td>In Canadian and Australian projects, a combination of autocratic and democratic leadership styles, in Scandinavian projects, democratic leadership style has been observed. There is no significant difference in terms of industry sector.</td>
<td></td>
</tr>
<tr>
<td>Nauman et al., 2022</td>
<td>IT and SW development sector</td>
<td>Transformational leadership has a significant and positive effect on project success. This effect can be enhanced through a team-building and empowerment climate.</td>
<td></td>
</tr>
<tr>
<td>Bhatti et al., 2021</td>
<td>IT and SW development sector</td>
<td>Ethical leadership is positively related to a leader’s trust and knowledge sharing, and the leader’s trust and knowledge sharing mediate the relationship between ethical leadership and project success.</td>
<td></td>
</tr>
<tr>
<td>Chaudhry et al., 2019</td>
<td>SW development sector</td>
<td>Project managers in the software industry mainly adopt three management styles: people-oriented, task-oriented, and organization-oriented. Younger and less-experienced PMs adopt mainly task-oriented leadership style.</td>
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</tr>
<tr>
<td>Maqbool et al., 2017</td>
<td>Construction sector</td>
<td>Project managers with high emotional intelligence and transformational leadership behavior ensure higher success in projects than do their counterparts.</td>
<td></td>
</tr>
<tr>
<td>Tabassi et al., 2016</td>
<td>Sustainable construction sector</td>
<td>Project managers in sustainable building projects have high qualities of transformational leadership, these qualities have an insignificant impact on the success criteria. The intellectual competence of project managers seems to be the most significant factor in sustainable project achievement.</td>
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<table>
<thead>
<tr>
<th>Literature considering project complexity</th>
<th>Study</th>
<th>Aspects of complexity considered</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Müller &amp; Turner, 2010</td>
<td>Low, medium, and high</td>
<td>Projects with high complexity require intellectual (IQ), managerial (MQ), and emotional (EQ) competencies. Projects with medium complexity require mainly managerial and some emotional competencies.</td>
<td></td>
</tr>
<tr>
<td>Podgorska &amp; Pichlak, 2019</td>
<td>Low, medium, and high</td>
<td>In projects with high complexity, managerial competencies matter the most; in projects with medium complexity, conscientiousness (EQ) matters the most; and in projects with low complexity, communication (MQ) matters the most.</td>
<td></td>
</tr>
<tr>
<td>Princes &amp; Said, 2022</td>
<td>Complexity of technology and organization</td>
<td>In complex projects, trust in leader and situational leadership can lead to financial sustainability.</td>
<td></td>
</tr>
<tr>
<td>Larsson et al., 2015</td>
<td>Number of stakeholders</td>
<td>Integrator leadership style (focus on interpersonal relationships) has a positive effect on project performance.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 3: Contextual features analyzed in previous studies

<table>
<thead>
<tr>
<th>Contextual feature</th>
<th>Study</th>
<th>Aspects of the contextual feature considered</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic importance</td>
<td>Podgorska &amp; Pichlak, 2019 (N = 102 PMs)</td>
<td>Renewal, repositioning, mandatory</td>
<td>In renewal projects project manager’s IQ plays the main role, in repositioning projects motivation (EQ), while in mandatory projects conscientiousness (EQ) is essential.</td>
</tr>
<tr>
<td>Contract type</td>
<td>Müller &amp; Turner, 2010 (N = 400 PMs)</td>
<td>Fixed price, remeasurement, alliance</td>
<td>For fixed price projects all competencies, except intuitiveness (EQ) is necessary. In fixed price projects IQ and MQ competencies have more importance, than in other type of contracts.</td>
</tr>
<tr>
<td>Knowledge sharing</td>
<td>Agarwal et al., 2021 (N = 8 PBOs)</td>
<td>Communities of practice, mentoring</td>
<td>Distributed leadership is enabled in organizations with advanced knowledge sharing.</td>
</tr>
<tr>
<td>Organizational culture</td>
<td>Agarwal et al., 2021 (N = 8 PBOs)</td>
<td>Control and stability, flexibility, and delegation</td>
<td>Distributed leadership is enabled in flexible, collaborative organizations.</td>
</tr>
<tr>
<td>Organizational structure</td>
<td>Chaudhry et al., 2019 (N = 208 PMs)</td>
<td>Functional, project, matrix</td>
<td>People-oriented management style is most likely to be adopted by project managers working in organizations with a matrix structure than a projectized structure.</td>
</tr>
</tbody>
</table>
5 CONCLUSIONS AND DIRECTIONS FOR FUTURE RESEARCH

Project managers’ leadership style is a critical success factor. However, there is no single leadership style that is suitable for all kinds of projects. Inherent project characteristics and contextual features of a project are en rapport with the appropriateness of the leadership style. Previous studies did not consider these factors in detail, which inhibits formulating correct and well-established conclusions. In terms of project type, prior studies focused mainly on the industry sector, and did not differentiate the types of projects per industry. Due to the indistinctive research of diverse projects within an industry sector, survey results exhibited inconsistent findings. The correlation between complexity and the project manager’s leadership style was considered by more researchers, who defined complexity differently but not in a comprehensive manner. Instead of adopting a broader approach, most of these studies analyzed only a one-on-one aspect of complexity. However, complexity of a project is a multifaceted concept, which correlates with many different factors (uncertainty, goal clarity, novelty, professionalism of project team members, attitude of stakeholders, etc.). Complexity also is a substantial characteristic of a project, and therefore has a considerable effect on the implementation process and success of a project. Despite its importance, there is a lack of consensus on the definition and conceptualization of complexity (Cristóbal, 2017). Further studies are needed to determine the relationship between project complexity and a project manager’s leadership style. Only a few authors studied the interdependencies of a project team’s characteristics, project management methods, organizational context, and the appropriate leadership style. The qualities of the project team, the importance of the project, the organizational structure and culture, and further contextual features correspond to the possibilities and margins, and thereby fundamentally the appropriate leadership style of a project manager.

This study offers a critical analysis of the current literature on leadership style approaches in project management. It highlights the inadequacies in previous research, and suggests future possibilities for exploring project characteristics and contextual features that correlate with leadership styles. The literature on this topic utilized various approaches to leadership styles, and analyzed multiple aspects of project characteristics and contextual features. However, inadequacies in the categorization and conceptualization of the analyzed characteristics impeded the formulation of definitive conclusions based on previous findings. Therefore, this study emphasizes the need for a well-established conceptual framework for the most essential project characteristics, particularly complexity. Furthermore, despite the investigation of a few contextual features in prior studies, it is imperative to consider the appropriate leadership style of a project manager in relation to the characteristics of organizational structure, culture, project team members, and other relevant factors.

Based on these summarized findings, there is a need for research investigating project characteristics and contextual features in detail to underpin the appropriate project managers’ leadership style, by means of deductive reasoning. To accomplish a well-established deductive reasoning process, first there is a need to highlight project characteristics, contextual features, and the features of the fundamental leadership styles, which provide the basis for further empirical studies. Such studies need to have two aims: to highlight the relationships between the inherent project characteristics and the features of the fundamental leadership styles; and to highlight the relationships between the contextual features and the features of the fundamental leadership styles. Based on these relationships, true premises might be formulated, by means of which valid conclusions may be formulated regarding the appropriate use of the fundamental leadership styles.

This study is limited in its scope, because it is mainly theoretical and does not provide empirical evidence to support its claims. Although it provides mainly theoretical contributions, the proposed comprehensive research could have significant implications for practitioners. The expected outcomes have the potential to match project managers’ leadership styles with the unique features of a project and its environment. In this way, a well-established framework could be developed for the selection of project managers, replacing the current trial-and-error process. The proposed framework would enable project
managers and human resource departments to better understand the interdependencies between leadership styles and the characteristics of a project and the project context. Moreover, the proposed research could have significant implications for practitioners by facilitating the selection and development of project managers with customized leadership styles that match the unique features of a project and its environment. Overall, the proposed research presents a valuable contribution to the project management field and has the potential to enhance the success of project implementation.

**REFERENCES**


