# Leadership strategic skills for the developmental projects

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## Abstract

Leadership is becoming skill-oriented. The study examines the critical leadership skills required for leading mega projects, such as NEOM. The study adopted a mixed-method approach. Initially, through a systematic literature review (SLR), seven key themes were identified. These themes were further explored through semi-structured interviews with project management professionals who possess knowledge worker expertise. The study used snowball sampling to select participants for the interviews. It was discovered that effective project leadership necessitates proficiency in change management, strategic thinking, and decision-making. Leaders are expected to inspire commitment, foster collaboration, engage in strategic thinking, identify, nurture, and retain future talent, and take initiative and manage change successfully. This study stands out in its meticulous design, merging literature analysis with firsthand experiences of knowledge workers in NEOM. Its recommendations for quantitative research and diversifying sectoral exploration contribute significantly to advancing leadership research in the context of complex development projects.

## 1. Introduction

NEOM is the merger of mega projects in Saudi Arabia. It is envisioned as a futuristic, technologically advanced city aimed at becoming a global hub for innovation, sustainability, and economic growth. It spans multiple sectors, including but not limited to technology, tourism, energy, and more, to create a cutting-edge, sustainable urban environment [1, 2]. These projects are pivotal in realizing the Kingdom of Saudi Arabia's (KSA) Vision 2030, encompassing infrastructure development, technological innovation, sustainable practices, economic diversification, and social enhancement, and contributing to the city's transformation into a model smart city of the future [3, 4].

These projects demand high-quality, dynamic leadership, which has become a challenge for organizations to face. For several years now, organizations have been buffeted by significant changes, often outside their control [5, 6]. Rapidly evolving technologies, demographic changes, broader shifts in economic, social, pandemic, technological, or market needs and requirements that affect organizations, and the restructuring of organizations into a flatter organizational structure, along with increased "churn" in the workforce, are only a few [7, 8]. The impact of these changes has created a demand for leadership skills and abilities that are not only suited to face contemporary challenges but are also prepared to adapt to what the future may bring [9, 10].

The leadership challenge is even more pronounced in the context of NEOM's developmental projects. These transformative initiatives demand leaders who can manage the complex and rapidly changing environment, akin to repairing an aircraft's engine in mid-flight [11, 12]. Unlike traditional engine repair, there is no readily available instruction manual for managing change, making it elusive even for seasoned leaders. Moreover, NEOM's projects require strategic thinking to look ahead, contemplate possibilities, pose probing questions, and scrutinize viewpoints before action [13-15]. This skill is not innate but honed through active engagement and openness to new ideas. They must encourage cross-functional collaboration and innovation workshops to stimulate creative problem-solving and forward-looking decisions [16, 17]. By nurturing strategic thinking in leaders, they ensure a more agile, visionary, and adaptable leadership cadre to steer the organization through its transformative projects [12, 18].

However, the current scenarios indicate that today's leaders must be adequately prepared to lead in the future. Organizations are experiencing difficulties in developing these skills in their current and emerging leaders, resulting in what is known as the leadership gap in the developmental project context [5, 19]. This leadership gap poses a significant challenge for developmental, transformative projects and public leadership. To bridge this gap, leaders must adopt a multifaceted approach, including fostering a culture of embracing change and innovation. They are expected to take the initiative, foster commitment among their workforce, build collaborative relationships, and identify and develop future talent. Based on the above synthesis, this study investigates the following question: "What are the leadership skills demanded for effective execution and success in developmental projects?"

The paper is structured as follows: The first section contains the study's introduction, rationale, objectives, and questions. Section II includes a literature review, followed by theoretical support for the study and a detailed methodology. The subsequent section presents the transcribed interview, followed by a thematic analysis. The final sections discuss the study's findings, contributions, and conclusion.

## 3. Methodology

The study is based on a qualitative multi-method approach. In the first phase, a comprehensive SRL was conducted to explore the critical in-demand skills of project leaders; for this, Scopus was selected to download related literature. Furthermore, for the screening process, the study used ("Leadership skills" OR "project future leadership" OR "Leadership competencies") AND ("Developmental projects" OR "Mega-projects" OR "Infrastructure projects") AND ("Project management" OR "In-demand skills") search to obtain the outcomes. The study focused on relevant titles and abstracts and conducted full-text screening based on inclusion and exclusion criteria, project context, time factors, quality assessment, and relevance. Additionally, the study employed secondary screening using a semi-automated process with Rayyan to exclude redundancies and duplication.

    a. Research work published only in the English language was considered for inclusion.
    b. The research was conducted from 2000 to 2024, and the focus was on recent transitions in the leadership of developmental projects.
    c. Research articles only from social sciences and management sciences were included in the study.
    d. Research articles, conference proceedings, reports, and periodicals were included in the study.
    e. Studies relevant to leadership skills and competencies in the developmental sectors were included.
    f. Studies focusing on leadership skills were included.
    g. The study focused more on developmental projects, especially large-scale mega projects.
    h. Both qualitative and quantitative studies were included.
    i. The study
    j. Included studies relevant to the developmental sector (construction, infrastructure, renewable energy, and technology).
    k. Cross-cultural and international perspectives were included.
    l. The study
    m. Included only peer-reviewed scholarly articles; news, blogs, and social media materials were excluded.

The PRISMA flow diagram in Figure 1 provides a pictorial and more detailed process of inclusion and exclusion.
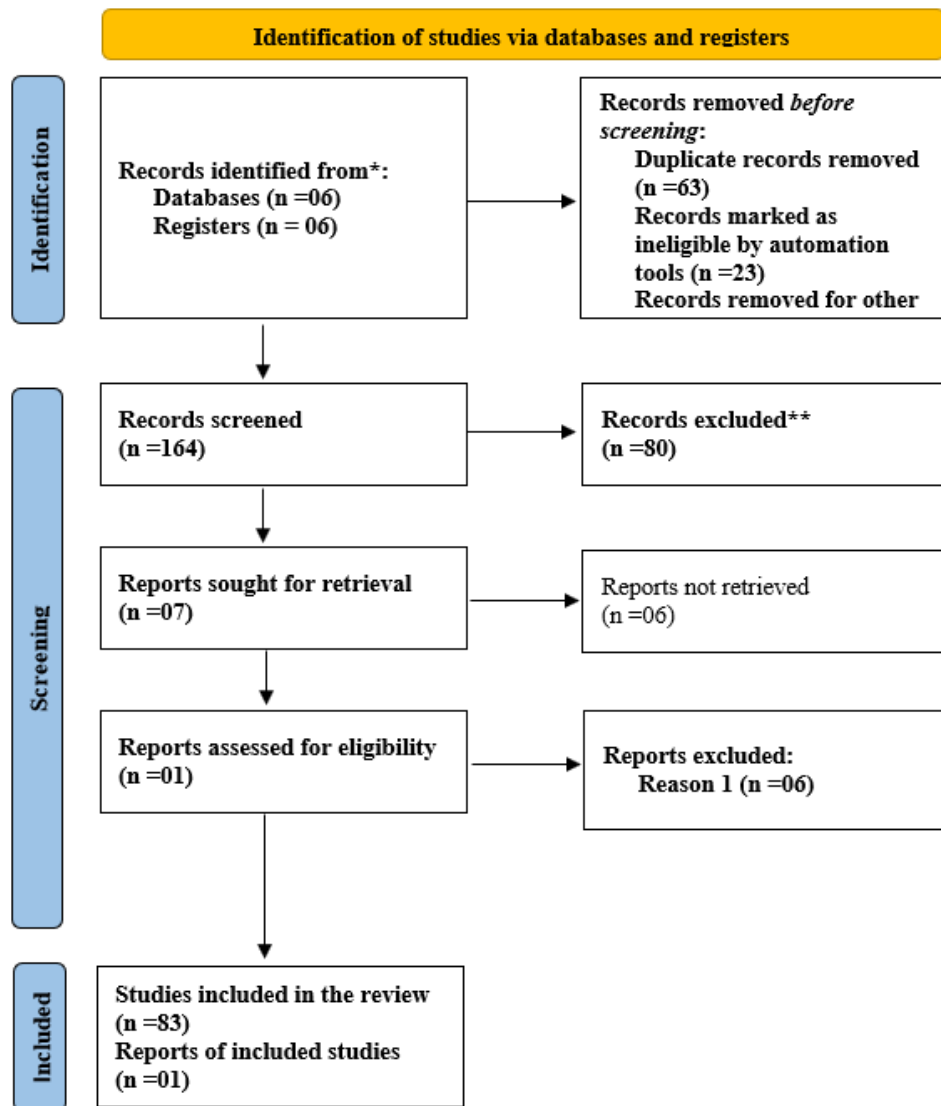
**Figure 1.**
PRISMA Flow Diagram for the study.

In the second stage, based on the findings (themes and in-demand skills) from the literature and the gaps, comprehensive interviews were conducted with project professional knowledge workers (having profound project knowledge, skills, and qualifications) working in different developmental projects and organizations. The knowledge workers worked on projects as project coordinators, assistants, and other knowledge workers. As the study's main objective was to assess the leadership skills of management and leaders, as per the recommendation, it remains quite valid, reliable, and authentic to collect data from their co-workers and subordinates. Moreover, this data type also provides better proposals regarding the gaps in leadership effectiveness and the needed practices for the organization and individual workers.

Later, these concepts were also identified and supported in scholarly writings and articles. The interview selection process was based on referrals and recommendations to collect quality data. Therefore, the study employed snowball sampling in the first phase. In the second stage, these professionals were approached using purposive sampling to select experts with domain knowledge. A total of 50 professional and experiential knowledge workers were approached; however, some declined participation for personal and professional reasons. Ultimately, 27 knowledge workers participated in the interviews. Nearly every interview lasted 40-45 minutes and was audio-recorded with respondents' consent. The study initially included ten (10) questions, which were refined after consultation with academic and industrial professionals. Additionally, two (2) questions were removed during the pilot phase due to redundancy and irrelevance. The questions are attached in Appendix A.

The study received various responses that shared the same theme and concept; therefore, the author consolidated them into aggregated responses within comprehensive paragraphs aligned with their respective themes, which were then shared again with the interviewees. This process took nearly one month, but the primary goal was to verify the responses, thereby enhancing the morale and confidence of the respondents. These themes are presented in the interview thematic analysis section.

## 4. Literature Review

### 4.1. Managing Change Successfully

Managing change in developmental projects can be equated to repairing an aircraft's engine in mid-flight. This analogy captures the complexity and urgency often accompanying change initiatives, which require careful consideration and well-timed execution to achieve the targeted results [20, 21]. Unlike traditional engine repair, there is no readily available instruction manual for managing change, and finding a clear resolution can be elusive. Even seasoned leaders may be hesitant when confronted with the inherent risks of change [22]. Therefore, leaders adept at managing change must comprehend these complex situations comprehensively.

To effectively develop leaders capable of navigating the turbulent waters of change in developmental projects, it is imperative first to acknowledge and embrace the possibility of failure or suboptimal outcomes [23]. This acceptance is crucial, particularly for those honing their change management skills. Avoiding or resisting change, or sticking to the status quo, is not sustainable in a rapidly evolving landscape. Embracing the potential for setbacks and learning from them is essential for growth and innovation [24].

Secondly, creating numerous opportunities for leaders to engage in projects, assignments, and roles that necessitate change management is essential. These experiences should be complemented by mentoring and coaching, providing leaders with valuable insights and guidance from experienced professionals [25, 26]. Formalized learning programs tailored to projects' specific challenges can enhance leaders' abilities to handle change effectively [24]. This multifaceted approach ensures that leaders are well-prepared to proactively address the dynamic nature of developmental projects, minimizing resistance and maximizing adaptability to drive sustainable growth and success [27, 28].

### 4.2. Strategic Thinking

In mega developmental projects, strategic thinking is a vital skill that demands dedication, inquisitiveness, and receptiveness to novel information. The ability to consistently look ahead, contemplate various possibilities, pose probing questions, and scrutinize existing viewpoints before committing to a course of action is invaluable [29, 30]. Nevertheless, this skill is not an innate gift but a competence honed through active engagement with others and a willingness to explore new ideas, challenge assumptions, and identify potential hurdles [31]. Research findings corroborate the significance of strategic thinking, particularly within developmental projects, which require foresight, adaptability, and innovative problem-solving [32, 33].

Previous research found a positive correlation between strategic thinking and enhanced decision-making. Leaders with better strategic thinking capabilities can better comprehend situations in complex and complicated circumstances [34]. Similarly, French [35] and Hölzle and Rhinow [36] proclaim that strategic thinking is not an individual task; a culture needs to be created where everyone can give their opinions. They should encourage cross-functional collaboration to develop strategies to optimize operations. This collaboration will foster the organization's ability to make informed decisions [37, 38].

To nurture strategic thinking among leaders, projects may draw inspiration from innovative organizational practices. Prominent strategic thinkers from various domains can be engaged to facilitate group learning sessions, infusing fresh perspectives and stimulating creative thought processes [37]. Periodic innovation workshops can serve as platforms for leaders to grapple with future-focused challenges and dilemmas outside their routine responsibilities [38]. By exposing its leaders to these diverse experiences and incorporating the principles of strategic thinking into their developmental journey, organizations can foster a more agile, visionary, and adaptable leadership cadre capable of steering the organization through the intricacies of its transformative projects [31].

### 4.3. Decision-Making

In developmental projects, decision-making is an indispensable component of managing change and strategic thinking. Ultimately, the trajectory of developmental projects, project prioritization, resource allocation, and even matters like promotions require making informed decisions [39, 40]. Like other critical skills, an effective decision-making process carries certain risks, influences, personal biases, organizational hierarchies, and a lack of empowerment among individuals. However, to cultivate robust decision-making capabilities in a developmental project context, organizations and leaders should assess existing decision-making processes and practices and identify other opportunities to grant better autonomy at different organizational levels [41, 42].

Similarly, research indicates that a culture encouraging risk-taking initiatives empowers individuals to make bold decisions at their level, which enhances both individual and organizational performance [43]. Additionally, these practices promote learning and equip project workers and leaders with the skills to effectively make complex data-driven decisions [44]. Furthermore, individuals' and organizations' cognitive aspects play a significant role in decision-making. According to Saługa et al. [45], Project leaders and workers should be trained regarding the role of information processing and their role in decision-making processes. Projectized organizations should incorporate cognitive-focused training programs for leaders and workers to promote decision-making processes [44].

### 4.4. Taking the Initiative

Within the ever-evolving setting of developmental projects, the skill of taking the initiative emerges as a pivotal attribute for leaders and team members alike. This capability does not inherently favor specific leadership tiers or select groups; instead, it can be cultivated across all levels of the organization [45]. Research corroborates that an individual's propensity to take the lead varies, with some naturally inclined towards initiative, while others develop this aptitude as they accumulate experience. However, recent global upheavals have understandably heightened risk aversion among individuals across the organizational spectrum [46]. Furthermore, taking the initiative exposes individuals to the scrutiny and judgment of their peers, senior leaders, subordinates, and even customers [47]. Therefore, fostering a culture of initiative within a project necessitates clear expectations and an environment that encourages and empowers individuals to proactively drive positive change [48].

Extensive studies in project management underline the significance of creating conditions that empower and motivate individuals to take the initiative [48]. Organizations and projects can take cues from these findings by actively conveying the expectation of initiative through various channels, such as senior leaders' endorsements, internal communications, performance reviews, and other means [49]. By elucidating the desired behaviors and outcomes associated with the initiative, NEOM can offer a roadmap for individuals at all levels to follow, thus fostering a collective mindset that embraces proactive problem-solving and innovation.

Additionally, projects can draw inspiration from best practices in change management and innovation. Organizations that excel in these areas often create dedicated spaces for employees to propose and explore innovative ideas without fear of judgment [50]. These safe environments enable individuals to experiment, learn from failures, and refine their ideas, ultimately fostering a culture of continuous improvement and initiative. By incorporating similar mechanisms into its organizational structure, leaders empower their leaders and workforce to take the initiative, ensuring that they actively contribute to the success and sustainability of its developmental projects [47].

### 4.5. Inspiring Commitment

In developmental projects, the hallmark of exceptional leadership lies in the ability to inspire unwavering commitment among its workforce [51]. While the popular image of such leaders often centers on charismatic leaders articulating the organization's mission and employees' pivotal roles in its success, the research underscores that genuine commitment is nurtured and solidified through the everyday experiences and interactions employees have with leaders in their immediate sphere [52]. The path to inspiring commitment in a diverse workforce must be standardized, given that employees represent various backgrounds and perspectives. Nevertheless, research reveals essential elements that contribute to this endeavor, including transparent communication, support for professional growth, personalized understanding of each individual, provision of support, and equitable and professional treatment [53].

Studies in organizational psychology reinforce the importance of transparent communication in fostering commitment. Leaders in developmental projects should strive to convey the organization's goals, values, and progress openly and consistently [50]. Research demonstrates that employees who feel well-informed about the organization's mission and direction are more likely to exhibit commitment and engagement [54]. Additionally, providing career growth and development avenues is instrumental in securing employee commitment [55]. A project-based organization should design learning opportunities for workers and leaders. This will enhance feedback and meaningful conversations among workers and leaders. It will also nurture individual affiliation with the organization and its mission, vision, and goals [56].

Moreover, although the leadership development process is more personalized and based on individual personality traits and leadership styles, the organization should foster these skills among workers and leaders as it promotes and inspires commitment [57, 58]. Better training and development programs address specific communication styles, emotional intelligence, and interpersonal skills. These promote opportunities for leaders to engage in meaningful discussions about the developmental projects' mission and purpose among project professionals and enhance and inspire commitment [56]. These individualistic and diversified approaches, aligned with individual and organizational needs, develop a culture of commitment and fuel the success of developmental projects [59].

### 4.6. Building Collaborative Relationships

In developmental projects, the ability to cultivate collaborative relationships is a pivotal marker of effective leadership. Research substantiates that forging meaningful connections with peers, subordinates, and higher-ranking leaders is a hallmark of leadership success and a foundational element underpinning other crucial leadership competencies [60]. Whether the objective is managing change, inspiring unwavering commitment, or influencing others to rally behind a vision, the absence of robust relationships can jeopardize the success of these endeavors [57]. However, as the project navigates the shifting terrain of remote and hybrid work arrangements, geographically dispersed teams, and technology-mediated interactions, the art of relationship-building demands a purposeful and dedicated approach [1, 61].

Recent studies describe the significance of intentional relationship-building, particularly in the context of mega projects. Building collaborative relationships within a developmental project's dynamic setting often begins with a sincere effort to understand the perspectives, motivations, and aspirations of others [62]. Previous research acknowledges the value of leadership development programs that can be initiated by incorporating relationship-building exercises in various

organizations. Similarly, cross-functional teams and collaboration can be developed to provide hands-on experience in collaboration development among project workers and leaders [50, 63].

Likewise, Aldusari [12] highlights the development of multifaceted leadership development strategies to foster collaborative relationships in organizations to manage mega projects most suitably. Innovative approaches need to be initiated, such as bringing leaders to the ground floor, the junior boards, and the field so that workers can learn from their experiences in dealing with customers. These relationship-building initiatives foster collaboration, encourage dialogue among leaders and members, and lead to ultimate project success [17, 52]. Both leaders and workers jointly handle complex situations effectively [24, 32].

### 4.7. Identifying and Developing Future Talent

Critical task identification and nurturing future talent are imperative for sustained growth and innovation in developmental projects. The research underscores that in today's competitive employment landscape, where workers have various choices, the expectation of continuous development on the job is paramount [64]. This expectation is particularly pronounced among Gen Z and millennial employees, who seek organizations that invest in their growth. Influential leaders possess a keen "nose for talent" and actively seek high-potential individuals from within and outside their organization [65]. To excel in this domain, project leaders must engage in self-reflection and self-development to assess the breadth of their perspective on what constitutes high-potential talent. They should challenge any hesitations about developing individuals who may one day surpass them and critically examine their selection criteria, moving beyond first impressions and comfort levels. Leaders must provide sustained support and developmental opportunities over time [66, 67].

Studies in talent management and leadership development corroborate the need for leaders to broaden their talent identification and development capabilities. Organizations draw insights from best practices in the field, where leaders often engage in multifaceted approaches to build their capacity in this area [68]. Serving as mentors to young and new employees is a potent method to identify and foster potential. Such mentorship programs facilitate knowledge transfer and create a culture of continuous learning [69]. Additionally, leaders can actively seek out diverse situations and learning experiences that expose them to various backgrounds, work styles, ages, and experiences. This broadens their perspective and enables them to recognize talent in unconventional places, contributing to a more inclusive and innovative talent pool [70].

Moreover, project leaders should capitalize on on-the-job opportunities and formal training programs to enhance their ability to nurture talent. These experiences can provide leaders with the tools and knowledge to guide others effectively [47]. Given the ongoing challenge of sourcing and competing for future talent, leaders at organizations may find that an increasing portion of their time is dedicated to talent identification and development. As such, investing in their development in this sphere becomes essential, ensuring they can lead their teams and the organization toward a prosperous future [70].

The literature concludes that in mega and complex projects like NEOM with an unprecedented scale, leaders should possess advanced thinking skills to integrate multi-disciplinary perspectives instead of focusing solely on conventional leadership skills. They need to ensure strategic alignment across projects and portfolios. Leaders are expected to manage change strategically and inspire commitment through collaborative relationships. They must practice adaptability to manage unforeseen challenges and foster opportunities. Moreover, leaders are expected to exhibit agility, initiative, and continuous learning; otherwise, the achievement of complex project results will remain a challenge.

### 4.8. Themes of the Study

In the context of mega developmental projects, project leadership takes center stage, demanding a diverse set of in-demand skills to navigate the intricate and ever-evolving landscape. When exploring the leadership gap, research and input from organizational leaders consistently point to high-impact leadership skills that are difficult to develop and not easily replicated by technology. The debate section explains some more in-demand skills one by one with the help of previous literature support. The themes of the study are presented in Table 1, listed in Appendix B.

### 4.9. Theoretical Support for the Debate

There are many leadership theories related to the context. However, the leadership style often depends on the size, structure, organizational culture, and setting of the projects. A transactional leadership style is preferred when timelines, standards, and milestones need to be achieved significantly [11]. This is also preferred when high efficiency and accountability are demanded, with strict workflow, established protocols, and clear-cut, repetitive tasking [71]. However, its rigidity and rule-based nature can stifle the creativity, agility, and adaptability needed for novel solutions. This negatively impacts employees' morale and engagement in transformative, innovative, and committed creativity, and transformational leadership has a better impact than transactional leadership style in managing complex projects [38].

Similarly, paradoxical leadership can be effective for managing contradictory demands in complex projects. Managing stability, flexibility, innovation, agility, and consistency is considered beneficial [72]. Paradoxical leadership is also productive in innovation-driven projects. It supports ambidexterity, optimizing current practices and processes for sustainable organizational performance. However, this dual focus needs to be clarified among knowledge workers. Innovation under strict efficiency and standardized rules remains challenging for workers [73]. Role ambiguity, duality,

decreased job satisfaction, and increased stress due to opposing directions. Likewise, paradoxical leadership places significant cognitive and emotional demands, which require a high level of self-awareness, adaptability, and emotional intelligence skills to meet the competing objectives. Most of the time, it suffers from decision fatigue and experiences burnout [9]. Additionally, strong communication skills are necessary to convey paradoxical objectives, and research indicates that mixed signals reduce project and organizational performance in many mega projects [16].

Furthermore, ambidextrous leadership balances exploration and exploitation and seeks to innovate based on established resources and strengths. It also encourages risk-taking and innovative behaviors and sustains operational efficiency. Similarly, it also promotes continuous learning, adaptability, and flexibility [58]. Conversely, in developmental projects, it works only when clear priorities and processes are set; otherwise, switching between exploration and exploitation leads to confusion and conflicts. Research indicates that employees tend to be more efficient and motivated when faced with tight deadlines and strict quality standards in an agile environment [41].

However, TLT is a prominent theory that emphasizes inspiring and motivating teams through a compelling vision, intellectual stimulation, individualized attention, and inspirational motivation. The transformational leadership role is fundamental in developmental projects, as it stimulates innovative thinking and nurtures an environment of adaptability in unforeseen situations. TLT extends all kinds of possible support to understand and appreciate the in-demand skills necessary for effective project leadership. These skills are interrelated and even interdependent facets of leadership excellence, and these can be better nurtured with transformational leadership [71].

As defined by Abbas and Ali [71] and Greimel et al. [8], Transformational leaders promote a compelling vision and inspire teams to accept change and view it as an opportunity for learning and growth. In developmental projects, innovation and adaptability are paramount, and transformational leaders can better guide through the turbulence of change and foster a culture of progress [19]. Furthermore, transformational leaders encourage strategic thinking and align project processes and practices with organizational goals. They handle project complications and complexities with strategic compasses and guide teams through uncharted territories [6].

Likewise, making effective decisions is another hallmark of transformational leadership. They foster collaborative decision-making and consider diverse perspectives, data, and inputs from workers [9]. This inclusive approach of transformational leaders ensures alignment of the project with the organizational strategic goals, vision, and mission through collective wisdom and shared values, which not only promote affiliation, cohesion, and collaboration among project workers but also enhance project success and throughput. In the same way, transformational leaders lead by example and encourage initiatives and risk-taking behaviors [55, 74].

Moreover, transformational leaders inspire commitment through their vision and inspirational communication. In mega projects, transformational leaders instill a sense of purpose and a shared vision of a common goal [55]. They also develop collaboration among workers through trust and cooperation, which is integral to developmental projects [5]. Similarly, transformational leaders are well-versed in and aware of the need for talent within the organization and the project. They nurture talent for the present and future [47]. This human asset, or the process of nurturing talent, is considered the lifeblood of the project's success and innovation. These skills are needed to navigate mega-project complexities and enhance collaboration among project knowledge workers [73].

In a nutshell, transformation leaders play a dynamic role in mega projects. They inspire motivation, stimulate the intellect, value individual considerations, and influence behaviors toward flexibility, adaptability, and project success [48]. Moreover, shared vision and common objectives are crucial in aligning project members with project and organizational goals and strategic vision. At the same time, transformational leadership encourages innovative thinking and problem-solving [10]. Furthermore, they believe in individual capacities, capabilities, and consideration. They develop a supportive environment for debate and dialogue, further enhancing their capacities, capabilities, and strengths and providing them with unique capabilities and skills for managing project complexities. In the same way, transformational leaders promote trust, commitment, and openness to change and risk, which nurture the culture of innovation and ideation and bolster project and organizational productivity [53].

## 5. Interview Analysis
### 5.1. Thematic Analysis of the Interviews
Structured and formal interviews were conducted with the project management knowledge worker, as cited in the methodology section. The theme of the responses is presented here in a holistic (aggregative) form for every dimension of leadership skills. Thematic analysis helps explore and interpret patterns and meanings within data. It offers a systematic approach to identifying, analyzing, and reporting patterns or themes within qualitative data sets. Its flexibility enables researchers to deeply explore and comprehend rich, complex data, making it an appropriate method for understanding diverse perspectives, experiences, or phenomena. The method allows for a detailed examination of textual data, enabling researchers to uncover underlying themes, patterns, and variations within participants' narratives or responses by providing a structured yet flexible framework. Thematic analysis aids in organizing and interpreting qualitative information, offering insights into key themes, issues, or concepts in the data.

The data was collected from workers engaged in various developmental projects in NEOM. NEOM is located northwest of Saudi Arabia and aligns with Vision 2030. It is a hub of ambitious multi-billion-dollar projects encompassing

nearly all sectors of life. It is considered a futuristic smart city, integrated with technology, with zero carbon emissions, aiming to create, integrate, and implement advanced technology to promote sustainability and quality of life [2].

The study developed aggregate responses for interviewees. Regarding managing change successfully, the knowledge workers responded, *"In project management, successful change relies on clear communication, steadfast support during transitions, defined goals, adaptable culture, and ongoing monitoring. Leaders should keep teams informed, engaged, and motivated, embracing change for growth, fostering a supportive project work environment for seamless adaptation, crucial for success in diverse project settings."*

Similarly, regarding strategic thinking, the respondent proclaimed, *"In project settings, decision-making demands strategic thinking, adaptability, and clear communication. Leaders make informed decisions, foster collaboration, empower team autonomy, and use technology for transparent, data-driven choices, crucial for project success amidst rapid change."*

Taking the lead and being intuitive are considered qualities of a project professional respondent. The interviewees responded that *"Leadership in projects necessitates proactive problem-solving, fostering initiative, and cultivating a culture that values creativity and self-starting behaviors. Encouraging open communication and idea-sharing drives efficiency and resilience, ensuring projects stay on course and adapt swiftly."*

In the same way, regarding commitment, the project knowledge workers were of the same opinion, added: *"Project leaders inspire commitment by communicating a compelling vision, leveraging digital platforms for impactful messaging, demonstrating unwavering commitment themselves, and recognizing individual/team achievements to boost morale and foster engagement towards project success."*

Moreover, to answer the question regarding building a collaborative culture and relationships, they added, *"In project leadership, overcoming physical barriers to teamwork is vital. Leaders foster trust, open communication, and clear expectations, utilizing technology for seamless collaboration, conflict resolution, and ensuring every team member's contribution is valued, driving effective teamwork and project success."*

Furthermore, in the aggregate response for identifying and developing future talent, the project knowledge worker responded, *"Project leaders proactively identify high-potential team members, fostering a culture of mentorship and tailored talent development programs. This strengthens capabilities and ensures long-term sustainability and adaptability in developing projects."*

The interviews expressed a high opinion of the strategic management and leadership skills for the NEOM projects. The positive tone of the interviews related to strategic decision-making, collaboration, and adaptability supports that leaders should be responsive, use clear communication, and provide unconditional support during transition and uncertainty. A culture of trust, flexibility, and adaptability is are major factor for successful project outcomes. Leaders extend all possible support in change and remain committed to developing team engagement and motivation. Similarly, leaders promote and train workers to think strategically to make informed, data-driven decisions. Moreover, the interviews also predict that proactive leadership in project settings values and supports initiative and open communication and ensures project resilience.

However, influential project leaders inspire commitment and vision and develop a platform for impactful interaction. These processes and practices promote workers' morale and foster engagement toward project success. Furthermore, these skills of influential leaders promote trust and collaboration among workers, even when handling projects in geographically dispersed areas, and this equitable recognition of both co-located and dispersed teams remains central to project success [72]. Lastly, proactive project leaders search, identify, and develop high-potential talent within a team through mentorship, which ensures long-term adaptability and strengthens workers' capacities and capabilities.

## 6. Discussion

The study is based on assessing strategic skills for developmental projects. The study admits that more transparent communication, unwavering support during change and transitions, encouraging adaptability, and continual monitoring of project operations and processes are critical aspects of project success [6]. Similarly, effective leadership continuously extends its support to develop resilience and motivation among professional knowledge workers, celebrate small incremental successes, and nurture a supportive culture and environment to boost morale, productivity, and efficiency among workers [51]. Additionally, sharing project goals and aligning them with organizational goals and objectives makes the processes and practices more explicit and robust, which encourages forward-thinking among workers, bolsters creativity and innovation, and ensures proactive problem-solving [56].

Similarly, the study agrees with previous findings that collaborative, data-driven decision-making empowers project workers to contribute meaningfully. Proactive project leadership takes the lead and promotes a culture of creative thinking and open idea sharing to optimize project processes and overcome the expected hurdles in the best possible way [48]. These processes inspire commitment and articulate a compelling vision [71]. Likewise, the study also confirmed that effective leadership research promotes and sustains high-potential individuals through mentorship, knowledge sharing, and other designed talent development programs [9].

Moreover, by combining different theories, the study presents a robust framework for mega developmental projects like NEOM. Transformational leadership has proven to be a driving force for such projects, inspiring vision and a collective sense of purpose, motivating and persuading teams, fostering adaptability and flexibility, promoting trust and continuous learning, and supporting strategic thinking, which remains essential for mega projects [51]. TLT shapes and

communicates vision, aligns the team, encourages problem-solving, empowers team members, and fosters commitment to the project's forward-thinking objectives [19, 58].

Transactional leadership fulfills day-to-day transactions with strict protocols, deadlines, and compliance, providing a stable foundation for exploration. It helps to achieve clear performance benchmarks. Likewise, paradoxical leadership helps to navigate inherent contradictions and foster innovation and better compliance [56]. They also encourage experimentation and autonomy among workers. Furthermore, ambidextrous leadership allows the coexistence of resource exploration and exploitation to channel the resources, which pursue operational efficiencies and innovation [73].

The study uncovered critical gaps in the current literature on public leadership in the context of developmental projects. After literature and interview synthesis, it identified seven (7) skills necessary for project leadership. The study also proposes a hybrid leadership model, considering diverse project needs and requirements. Moreover, the findings extended and validated the transformational leadership theory (TLT), which aligns with the essential leadership skills for adaptability, innovation, and collaboration. The study further emphasizes the importance of leadership support during transition stages, the cultivation of an adaptable culture, and strategic thinking to promote resilience and long-term sustainability among knowledge workers in the project context.

## 7. Conclusion

The study investigates the traits and in-demand skills for effective leadership in project management, especially when dealing with mega projects in uncertain environments. The study concluded that leaders should possess effective project management and leadership skills to think strategically, be analytical to make data-driven decisions, and be encouraged to take initiatives and risks to bring value, innovation, and a new philosophy to the project context. Moreover, they should inspire commitment, develop collaborative relationships among project professionals, and especially explore, develop, and retain future talent. To incorporate change, leaders are supposed to prepare themselves and their workers for the possibility of failure, and they should tailor a comprehensive program to learn from experiences and exposure, incorporating the best possible options to navigate the complexities of the uncertain project world.

According to the study, influential leaders develop a culture of trust, where workers even share their failures. They encourage risk-taking activities, introduce new thinking, philosophies, and optimism, and provide new directions for projects. These processes and practices create opportunities for growth, learning, and development. They promote transparent communication, offer career development opportunities, and align individual aspirations with organizational goals and objectives. They foster cooperation among team members, broaden perspectives, engage in mentorship, and develop diverse experiences to recognize potential beyond conventional norms, ensuring a diverse and innovative talent pool for growth.

Future studies may focus on strategic thinking and immersive learning experiences within the project context, utilizing the latest technological tools such as AI, which also support decision-making processes, milestone verification, and other related domains. Moreover, empirical studies exploring contextual factors, including cultural diversity and trust-building, in various industries can be conducted. Additionally, a longitudinal study is recommended to assess the implications of in-demand skills for project leadership.

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