7th Conference on Sustainability in Civil Engineering (CSCE'25)
(An International Conference)
Department of Civil Engineering
Capital University of Science and Technology, Islamabad Pakistan

COMPARING CONSTRUCTION PROJECT MANAGERS AND MILITARY OFFICERS IN THE UNITED STATES: LEVERAGING VETERAN LEADERSHIP AND SKILLS FOR WORKFORCE DEVELOPMENT IN THE CONSTRUCTION INDUSTRY

[a] Amna Salman*, [b] Gavin Medley

a: McWhorter School of Building Science, Auburn University, Auburn, AL., USA. azs0072@auburn.edu
b: McWhorter School of Building Science, Auburn University, Auburn, AL., USA. gnm009@auburn.edu
* Corresponding author

Abstract- The construction industry faces growing demand for skilled project managers, while transitioning military veterans offer valuable leadership and problem-solving skills essential for this sector. However, veterans encounter barriers in translating military experience into civilian careers, including employer perceptions about skill transferability. This study compares job functions and skills of military officers with those required of construction project managers in the United States to evaluate transferability and inform transition strategies. Through qualitative interviews, our research revealed significant alignment in core competencies such as leadership, communication, coordination, problem-solving, and resource management. Findings indicated that while military officers possess these foundational skills, they often lack construction-specific technical knowledge and industry terminology. Primary transition challenges stemmed from cultural differences, unfamiliarity with industry regulations, and difficulties adapting leadership styles to civilian workplaces. Recommended interventions include targeted technical training programs, industry-specific mentorship networks, employer awareness initiatives, expansion of transition programs like Department of Defense (DOD) SkillBridge, and development of tools translating military experience into industry-recognized language. These strategies will facilitate integration of military talent into construction management, addressing industry workforce needs while supporting veterans' successful career transitions.

Keywords- Veteran Employment, Military Transition, Construction Management, Skill Transferability

1 Introduction

The construction industry faces a growing demand for skilled professionals to manage increasingly complex projects [1]. At the same time, military veterans transitioning to civilian life offer valuable experience, leadership skills, and problem-solving abilities acquired through their service [2]. Despite the potential for veterans to fill critical roles in construction, many struggle to translate their military experience into civilian careers [3]. Accordingly, this causes a disconnect between the skills veterans acquire in the military and the specific requirements of construction project management.

The Project Management Institute's (PMI) talent gap report [1] predicts a 13.2% increase in global construction project management jobs by 2030, with nearly 61.5 million roles anticipated. At the same time, the Department of Veterans Affairs [2] highlights a significant population of post-9/11 veterans, who possess managerial and professional experience. While veterans have transformational leadership traits shaped by their military training [4], employer scepticism about the

transferability of military skills, particularly soft skills like communication, remains a significant barrier [5]. This study seeks to address this challenge by examining the overlap between military officer skills and those required in construction project management, offering insights to improve veteran employment outcomes and maximize their potential in civilian roles. Although military veterans possess valuable leadership and problem-solving skills, they often encounter challenges in translating these competencies into the civilian construction sector. This misalignment results in underutilized human capital and unfulfilled industry labor demands. By identifying skill compatibility between military leadership experience and construction industry requirements, this research aims to develop an evidence-based framework to assist both veterans transitioning to civilian careers and construction employers seeking to leverage military talent.

2 Literature Review

The integration of military veterans into civilian roles, particularly in construction project management, has gained significant attention. Various research highlighted the strong alignment between military training and project management competencies, yet challenges persist in veterans' transition to the civilian workforce [6].

Studies indicate that veterans possess leadership, resilience, teamwork, and organizational skills that are highly valuable in civilian employment [7]. Many have prior exposure to project management frameworks, making them strong candidates for construction management roles [8]. Additionally, attributes such as adaptability, trust, and cross-cultural experiences further enhance their potential contributions. Construction project management, on the other hand, requires competencies such as leadership, organization, problem-solving, and teamwork—skills that align with military training. Studies frequently highlighted key competencies distinguishing high-performing project managers, including initiative, client focus, analytical thinking, and flexibility [9], [10]. Moreover, military coordination practices and values offer additional insights that can benefit construction workforce development.

On the other hand, despite their strengths, veterans face obstacles in securing civilian employment [8]. Mental health concerns, limited transition programs, employer perception gaps, and stereotypes hinder successful integration. Service-related disabilities and job-fit biases further complicate employment prospects. However, peer support, networking, and career development initiatives help veterans navigate these challenges.

While the existing studies highlight veterans' potential and the importance of non-technical skills—such as leadership, collaboration, and ethical decision-making—in construction project management, they also acknowledge transition challenges. Veterans possess these critical soft skills but may require supplemental technical training to fully leverage their leadership and problem-solving abilities in construction contexts [11]. Effective workforce development initiatives should, therefore, focus on bridging technical knowledge gaps while capitalizing on veterans' existing leadership competencies. This review underscores the need for targeted programs that support veterans' transition into construction careers, align their military expertise with industry requirements, and address employer perception gaps to maximize veterans' contribution to the sector.

Despite evidence of skill overlap, there is limited research evaluating specific behavioral competencies shared by military officers and construction project managers using comparative qualitative methods. Few studies have provided empirical data on transition challenges and strategies from veterans' perspectives within the U.S. construction context.

3 Research Methodology

After the initial problem identification and literature review, a pilot survey was developed consisting of open-ended and closed-ended questions. Figure 1 shows the research methodology employed. The pilot survey focused on the comparison between construction project managers (CPMs) and military officers (MOs) regarding leadership, skills, and transition potential into the construction industry. The dissemination of the pilot survey was done through email invitations. This preliminary phase aimed to validate and enhance the interview questions based on feedback from participants.

For data collection, purposive sampling combined with snowball sampling was adopted to obtain participants for the study. Purposive sampling is selected when researchers need participants to possess the information, knowledge, or experience necessary for the study. After gathering data from these initial participants, the researcher asked them to refer to individuals who might meet the criteria or have relevant experiences. This created a "snowball effect" that grew the sample size

organically. This research targeted two types of individuals; (1) project managers and (2) veterans who have transitioned to project manager roles in the construction industry.

Figure 1: Research Design Framework

For data analysis, thematic analysis was used to analyze the interview transcripts. This process involved identifying recurring themes and organizing them to report the findings. Thematic analysis helped highlight the key challenges military officers face when transitioning to civilian project management roles, offering a comprehensive understanding of the transferable skills and leadership qualities they bring to the construction industry. Figure 2 illustrates the step of the thematic analysis, based on Nowell's study [12].

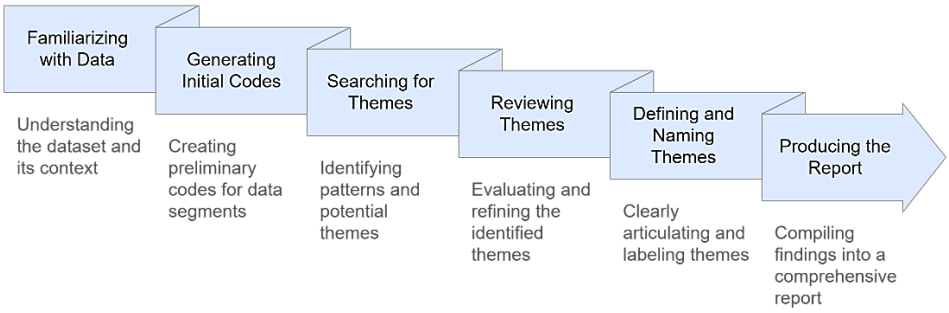

Figure 2: Phases of Thematic Analysis

Lastly, in Step 7, we developed concise guidelines based on industry standards and interview insights to prepare transitioning and former Military Officers (MOs) for construction project management roles. These guidelines offer a comprehensive roadmap tailored to address the unique challenges faced by MOs entering the construction industry.

3.1 Data Collection

Semi-structured interviews were chosen to capture in-depth insights into the transition experiences, perceptions, and competencies of both military officers and construction project managers. Qualitative interviews are effective in understanding complex phenomena and lived experiences [13]. The interview questions were formulated based on a comprehensive literature review, leading to a total of 12 interviews conducted, with six Construction Project Managers (CPMs) and six Military Officers (MOs). These questions were categorized into four main topics: job description analysis, transferability of skills, challenges with transition, and insights for transition. Notably, no identifying information was collected during the interviews to ensure anonymity and confidentiality. There was a total of twelve participants in the study. Table 1 provides detailed information on each participant, including their unique ID, current job position within their company, the state in which they are employed, and their total years of experience. The table includes both Construction Project Managers (CPMs) and Military Officers (MOs), offering a comparative overview of their professional backgrounds.

Table 1: Participants' Data

Participants	Position	State	Years of Experience
Construction Project Manager (CPM)			
CPM-1	Senior Project Manager (SPM) - Heavy Civil	FL	10
CPM-2	PM-Heavy Civil	FL	6
CPM-3	SPM-Commercial	AL	11
CPM-4	PM-Commercial	AL	7
CPM-5	PM-Industrial	GA	6
CPM-6	PM-Commercial	TN	5
Military Officer (MO)			
MO-1	1st Lieutenant	GA	3.5
MO-2	1st Lieutenant	AL	1.5
MO-3	1st Lieutenant	AL	1.5
MO-4	Captain	GA	3.5
MO-5	Captain	AL	3.5
MO-6	Major	AL	6.5

Military officers must adhere to minimum Time in Grade (TIG) requirements to be eligible for promotion. These minimums produce a cumulative Time in Service (TIS), shown in the table above. At each officer's rank, this ensures adequate experience and development in that position. Second Lieutenants require at least 18 months in grade. First Lieutenants need two years. For Captains, a minimum of 3 years TIG is required. This means a Captain's minimum TIS is the sum of their time as a Second Lieutenant and First Lieutenant.

4 Results

Following the transcription of all interview recordings into text format, thematic analysis was conducted to identify recurring patterns across the data. For this study, a theme was established when a specific topic or concept appeared in the responses of at least three participants (50%) within a given stakeholder group. The identification of these themes did not require verbatim repetition; rather, themes were coded based on conceptual similarity across participants' responses, capturing the underlying ideas regardless of the specific terminology used by individual interviewees. As a result, a total of four themes were defined: (i) skills alignment, (ii) transferability of skills, (iii) transition challenges, and (iv) transition insights.

4.1 Skills Alignment

The comparative analysis of Military Officers (MOs) and Construction Project Managers (CPMs) reveals significant skill convergence in several key domains, as shown in Table 2. This analysis emerged from thematic coding of the semi-structured interview responses focused on job competency requirements.

Table 2: Skill Alignment between Mos and CPMs

Group	Number of Respondents	Frequency	Description
Both CPMs and MOs	12	26	Coordination, communication, problem-solving, resource management, risk management, and leadership & development
CPMs	4	10	Technical expertise specific to construction
MOs	3	7	Technical expertise specific to the military

Figure 3 presents these findings as a Venn diagram highlighting the substantial overlap in core competencies between the two professional domains. Both CPMs and MOs demonstrate proficiency in coordination, communication, problem-solving, resource management, risk management, and leadership development, which are the skills essential for managing complex projects and managing diverse teams across both sectors.

The primary divergence appears in domain-specific technical knowledge: CPMs possess specialized construction industry expertise including building codes and construction methodologies, while MOs develop proficiency in military-specific operations, strategic planning, and logistics systems. This complementary skill distribution suggests considerable potential for transitional career pathways, with research supporting project management as a particularly viable career trajectory for veterans given the substantial alignment in foundational leadership and organizational competencies.

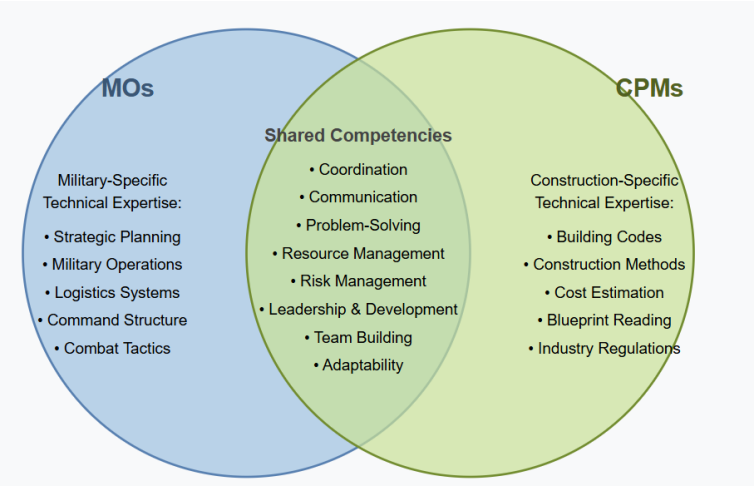

Figure 3: Venn Diagram of Skill Alignment Between MOs and CPMs

4.2 Transferability of Skills

To evaluate the transferability of skills between construction project managers (CPMs) and military officers (MOs), CPMs were asked to assess themselves based on the 12 behavioural competencies outlined by Dainty et al. [10]. These competencies are known to correlate with high-performing project managers, as they blend technical job demands with essential traits for effective managerial performance. This scale typically uses a 5-point Likert-type rating system where respondents self-evaluate their proficiency level in each competency area, ranging from 1 (basic/limited proficiency) to 5 (expert/mastery level). Table 3 compares the mean value of the 12 behavioural competencies for CPMs and MOs.

Table 3: CPMs vs MOs Dainty's 12 Competencies

Competency	**CPMs**	**MOs**
Achievement orientation	2.5	4.8
Initiative	3.33	4.2
Information seeking	3.08	4.4
Focus on the client's need	1.91	4.4
Impact and influence	2.75	3.6
Directiveness	3.5	4
Teamwork and cooperation	3.92	4
Team leadership	4.33	4
Analytical thinking	2.67	4.6
Conceptual thinking	2.58	4
Self-control	2.66	4.2
Flexibility	3.00	2.8

The results showed MOs rated themselves higher than CPMs in most categories, except for team leadership and flexibility. This reflects the structured nature of military roles, suggesting areas for growth in adaptability and collaborative leadership. The findings highlight both the strengths MOs bring, such as high achievement and analytical thinking, and the potential development needs as they transition to civilian construction project management, aligning with insights from the literature review.

4.3 Transition Challenges

The thematic analysis of interview data revealed multiple recurring barriers faced by military personnel transitioning to civilian construction careers. Four primary challenges emerged consistently across respondent groups: cultural adaptation difficulties, unfamiliarity with industry-specific terminology, leadership style adjustment, and integration into civilian workplace environments. Each of these challenges was independently identified by multiple participants, highlighting their significance in the military-to-civilian transition process. These findings align with existing literature documenting the multifaceted nature of veteran career transitions, while providing specific insights into challenges within the construction management context.

4.4 Transition Insights

Several strategic insights emerged as crucial factors for military officers transitioning into civilian construction project management roles. Analysis of interviews with transitioning officers revealed four key themes, as illustrated in Figure 4 and detailed in Table 5. These themes represent evidence-based pathways to facilitate successful career transitions from military leadership to construction project management positions.

The results showed that networking and industry engagement play a pivotal role during the transition. Active networking facilitated connections with industry professionals, potential employers, and mentorship opportunities within the construction sector. As one participant observed, *"As you transition into the construction industry, focus on networking events, mentorship programs, and online platforms. They'll connect you with opportunities, industry insights, and a supportive community for a smooth transition."*

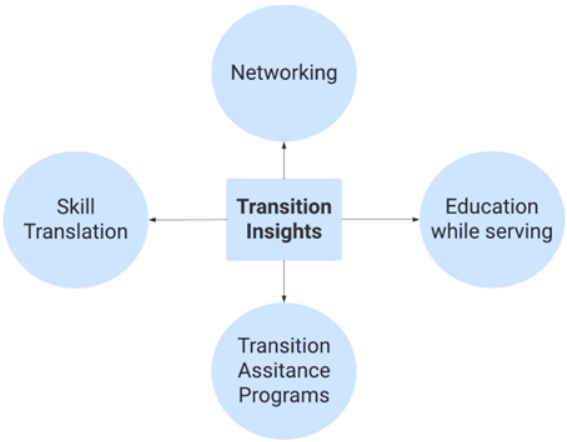

Figure 4: Transition Insights

Continuous education and certification programs emerged as another key insight. Participants emphasized the significance of attaining relevant education, certifications, and training while serving in the military, noting the importance of *"education and awareness campaigns*" to bridge the gap between military knowledge and civilian careers.

Effective communication of military skills for civilian roles was also a recurring theme. Participants stressed the importance of translating and effectively communicating relevant military skills and experiences during the recruitment process, advising transitioning officers to "showcase leadership abilities, problem-solving skills, project management expertise, and teamwork capabilities, highlighting how these skills are transferable to construction project management roles."

Utilization of transition assistance programs, notably the Department of Defense (DOD) SkillBridge initiative, was identified as a valuable resource. The DoD SkillBridge initiative enables military personnel approaching separation to acquire civilian workplace skills through professional development opportunities. SkillBridge provided transitioning officers with practical experience, industry insights, and mentorship opportunities in construction project management. As one participant reflecting on their own experience noted, *"This training was incredibly beneficial as it allowed me ample time to prepare for my transition into civilian construction roles..."*

Table 5: Transition Insights and Occurrences

Common Phrases/Themes	Occurrences
Emphasizes building connections with construction professionals, mentors, and potential employers for insights and opportunities.	5
Focuses on obtaining relevant education and certifications, bridging the knowledge gap between military experience and civilian careers.	4
Advises on translating military skills and experiences into language understood by civilian recruiters, highlighting transferable leadership, problem-solving, and project management abilities.	3
Highlights the importance of programs like the DOD SkillBridge, allowing practical experience and mentorship opportunities in construction project management.	3

5 Conclusion

Effective communication of military skills is crucial, with veterans encouraged to highlight leadership, problem-solving, and project management abilities during recruitment. The DOD SkillBridge initiative, offering practical experience and mentorship, was identified as a valuable resource for veterans transitioning into civilian roles. This study found strong alignment between military officers' and construction project managers' core competencies, such as leadership, communication, and problem-solving. However, it highlighted the need for targeted training to address gaps in construction-specific technical knowledge. Transition challenges mainly stemmed from cultural differences and unfamiliarity with industry regulations, making it vital for both veterans and employers to address these issues for smoother integration.

Recommendations include developing targeted training programs, establishing mentorship networks, and raising employer awareness of veterans' skills. Expanding programs like SkillBridge and creating tools to translate military skills into civilian roles could further ease transitions. Implementing these strategies will help the construction industry tap into the veteran workforce, addressing skill shortages while offering fulfilling career paths for veterans. Future research could explore the long-term career trajectories of veterans in construction, evaluate the impact of transition programs like SkillBridge, and assess the industry's understanding of veterans' transferable skills.

Several limitations exist in this research. First, the study's focus on the United States may limit the generalizability of findings to other regions with different construction and military contexts. Additionally, reliance on self-reported data through interviews and surveys introduces the potential for response bias. These limitations underscore the need for cautious interpretation and suggest avenues for future research to address these constraints.

The sampling geographical region was restricted to the United States, ensuring a focused examination of construction project managers (CPMs) and military officers (MOs) within this context. The CPMs interviewed had accumulated project management experience spanning various locations across the US, reflecting diverse perspectives and practices within the construction industry. Similarly, the MOs included in the study served or are currently serving in roles across different regions of the US, contributing to a comprehensive understanding of military leadership in civilian project management settings. Despite the relatively small sample size, the findings have implications that can be extrapolated to construction projects nationwide, offering valuable insights applicable across different geographical areas within the US.

References

[1] "Project Management Job Growth and Talent Gap 2017–2027," Project Management Institute, 2017.
[2] "U.S. Department of Veterans Affairs." [Online]. Available: http://va.gov/
[3] S. Azhar, W. Noel, A. Nadeem, and G. Akhanova, "Veteran Workforce Development: How Veterans can make a Positive Impact on Workforce Development in the Construction Industry.," in Environmental, Opportunities, and, challenges, Constructing, commitment, and, acknowledging, human, experiences, 2016.
[4] T. Kolditz, "Why the Military Produces Great Leaders," 2009.
[5] M. Keeling, S. Kintzle, and C. A. Castro, "Exploring U.S. Veterans' post-service employment experiences," Mil. Psychol., vol. 30, no. 1, pp. 63–69, Jan. 2018, doi: 10.1080/08995605.2017.1420976.

[6] P. L. Briggs, S. Azhar, and M. Khalfan, "Veteran workforce development: how veterans can make a positive impact on workforce development in the construction industry," Int. J. Sustain. Soc., vol. 12, no. 3, pp. 220–237, Jan. 2020, doi: 10.1504/IJSSOC.2020.109768.
[7] J. M. Haynie, "Business Case for Hiring a Veteran," Harv. Bus. Rev., 2016.
[8] T. Richardson, J. Marion, M. Earnhardt, and V. Anantatmula, "Project Management: A Natural Career Destination for Military Veterans," J. Mod. Proj. Manag., vol. 8, no. 1, pp. 64–81, Jul. 2020, doi: https://doi.org/10.19255/JMPM02304.
[9] F. Pariafsai and A. H. Behzadan, "Core Competencies for Construction Project Management: Literature Review and Content Analysis," J. Civ. Eng. Educ., vol. 147, no. 4, p. 04021010, Oct. 2021, doi: 10.1061/(ASCE)EI.2643-9115.0000051.
[10] A. R. J. Dainty, M.-I. Cheng, and D. R. Moore, "Competency-Based Model for Predicting Construction Project Managers' Performance," J. Manag. Eng., vol. 21, no. 1, pp. 2–9, Jan. 2005, doi: 10.1061/(ASCE)0742-597X(2005)21:1(2).
[11] Y. H. Ahn, R. P. Annie, and H. Kwon, "Key Competencies for U.S. Construction Graduates: Industry Perspective," J. Prof. Issues Eng. Educ. Pract., vol. 138, no. 2, pp. 123–130, Apr. 2012, doi: 10.1061/(ASCE)EI.1943-5541.0000089.
[12] "Thematic Analysis - Lorelli S. Nowell, Jill M. Norris, Deborah E. White, Nancy J. Moules, 2017." Accessed: Mar. 12, 2025. [Online]. Available: https://journals.sagepub.com/doi/full/10.1177/1609406917733847
[13] Kvale, S., and Brinkmann, S. "InterViews: Learning the Craft of Qualitative Research Interviewing (2nd ed.)." Thousand Oaks, CA: SAGE Publications, 2009.