EPiC
Built
Environment

Lessons from Major Disruptions: Preparing Disadvantaged Construction Project Managers for Future Crises

Benjamin Morgan, Kamalesh Panthi and Lewis Waller
Morgan State University

The construction industry has experienced significant disruptions over the past 50 years, each of which has had a substantial impact on project costs, labor availability, material supply, and overall industry stability. These disruptions have shaped the industry's resilience and adaptation strategies. Navigating through financial crises, geopolitical events, and tariff policies presents significant challenges for disadvantaged project managers, who must continually adapt to an ever-changing landscape. The most notable disruption in recent years was the COVID-19 pandemic, which had a significant impact on business operations across various industries. The pandemic's impact on construction projects highlighted numerous challenges, prompting an examination of lessons learned to better prepare for future crises. While the pandemic affected construction professionals broadly, disadvantaged construction project managers faced additional unique challenges exacerbated by existing inequalities. This study employs a phenomenological approach, utilizing interviews and surveys with disadvantaged construction project managers to gather firsthand insights into their experiences during the pandemic. The research highlights key adaptive strategies that helped disadvantaged project managers maintain project continuity and resilience. Fostering digital literacy, implementing robust DEI initiatives, and promoting adaptive leadership are essential strategies to bolster resilience and ensure more equitable outcomes in future crises within the construction industry.

Keywords: COVID-19, Disadvantaged, Project manager, Construction, Adaptive strategies

Introduction

Throughout several economic and global crises spanning from the 1980s to the present, the construction industry has faced significant disruptions, including reduced activity, delayed or canceled projects, and rising costs due to inflation, tariffs, and supply chain challenges. Each period in history presented unique challenges, including high interest rates during the Savings & Loan Crisis, the collapse of commercial office construction following the Dot-Com Bubble and 9/11, the devastating impact of the 2008 Financial Crisis, workforce shortages after the Great Recession, and the pandemic's effects on materials and labor. The COVID-19 pandemic exposed the vulnerabilities of numerous sectors, including construction, where disadvantaged project managers faced heightened challenges due to pre-existing inequalities. Disadvantaged project managers face systemic barriers and challenges that hinder their ability to perform effectively. Katikireddi et al. (2021) highlights that

the COVID-19 crisis has disproportionately impacted minority ethnic groups due to structural inequalities, such as social determinants of health, healthcare access, and systemic racism. These barriers include limited access to resources, opportunities, support and discrimination or bias based on race, gender, socioeconomic status, or educational background. The characteristics of disadvantaged project managers often include working in environments with fewer resources, having less access to professional development opportunities, and experiencing higher levels of stress and job insecurity compared to their counterparts (Kniffin et al., 2021).

To the authors' knowledge, no study has specifically addressed how to apply lessons learned from the COVID-19 pandemic's impact to enhance the resilience and adaptability of disadvantaged project managers in the face of future significant disruptions. Examining the shortcomings and weaknesses revealed during the pandemic reveals common themes that warrant further investigation. Fournier et al. (2020) stated that inclusive, responsive, empathetic, and flexible leadership that constantly communicates when facing uncertainty builds trust. To guard against future pandemics, the mental health and well-being of all employees, as well as their career calling (Wu et al., 2019), should be considered to mitigate stress, burnout, and physical harm. This study has explored lessons learned from the COVID-19 pandemic, focusing on performance, team dynamics, and professional development, which can be strategically applied to enhance the abilities of disadvantaged project managers and aid them in navigating future significant disruptions.

This study aims to answer the question: How can disadvantaged project managers in the construction industry effectively navigate significant disruptions to address future crises? The COVID-19 pandemic will be used as a significant disruption for this study, given its major impact on the construction industry. Even since the start of 2025, the U.S. construction industry has faced steep tariffs on key materials, including lumber, steel, and aluminum, as well as additional tariffs on Chinese imports, resulting in increased project costs, inflation, and delays. This impact, thus far, has not had the same impact on society as COVID-19 has. Due to the complex interplay of COVID-19, it caused minority ethnic groups to be disproportionately affected (Katikireddi et al., 2021). In exploring the research question, it is crucial to understand the experiences, strategies, and lessons learned by disadvantaged project managers during the COVID-19 pandemic. The sub-questions to the main research question are as follows:

- RQ1: What specific challenges did disadvantaged project managers face during pandemic?
- RQ2: What adaptive strategies have disadvantaged project managers employed during the COVID-19 pandemic?
- RQ3: What steps can organizations take to support disadvantaged project managers during times of crisis, such as the COVID-19 pandemic?

Literature Review

The COVID-19 pandemic has had unprecedented impacts on the construction industry, particularly on disadvantaged project managers. The COVID-19 pandemic rapidly transformed industries, accelerating digitalization in previously unimaginable ways and significantly impacting construction that relies heavily on physical presence and hands-on management (Konzula & Tolic, 2021). While there were some positive outcomes as a result of the COVID-19 pandemic, there were also significant negative impacts, particularly in the construction sector, including supply chain disruptions, labor shortages, project delays, and increased costs that strained resources and delayed progress on numerous projects. These effects were even more pronounced for minority construction professionals, who faced additional challenges such as limited access to resources, reduced job security, and disproportionate financial strains (Baral et al., 2022). A systematic literature review was conducted in

the areas of i) effects of the pandemic on construction projects in general, ii) impact of pandemic on disadvantaged project managers specifically, and iii) lessons from COVID-19 pandemic disruptions for disadvantaged project managers on building adaptability and resilience.

1.   Effects of the Pandemic on Construction Projects in General

The construction industry faced significant job losses, as many workers were laid off or furloughed, which further exacerbated economic distress. The construction industry is crucial to the overall economies of many countries, significantly impacting other economic sectors and the growth of the gross domestic product (GDP), both positively and negatively (Alfadil et al., 2022). Supply chain disruptions further inflated costs and caused delays in obtaining essential materials, compounding the difficulties for project managers. The pandemic's financial impacts include revenue losses from canceled contracts, severe pressures on working capital, and rising borrowing costs due to delayed financing, necessitating proactive assessment, planning, and frequent communication with employers to manage these challenges effectively (Alfadil et al., 2022).

Several studies have demonstrated that COVID-19 has had a negative impact on project performance in the construction industry. The primary factors contributing to this negative impact are supply chain disruptions, labor shortages, and delays in material delivery. A study by Rani et al. (2022) found that COVID-19 resulted in project delays, cost overruns, and reduced productivity in the Indian construction industry. Similarly, Alshehri et al. (2021) revealed that the pandemic had negatively affected project progress in the Saudi Arabian construction industry. The pandemic led to significant disparities across the United States regarding whether construction operations were deemed essential, causing confusion and varying impacts on projects, with some states fully operational and others experiencing complete shutdowns. This variability resulted in uncertainty about operational status, concerns over future restrictions, and significant impacts on upstream suppliers and related industries Alsharef et al. (2021); Khalef et al. (2022) found that productivity rates due to COVID-19 dropped significantly due to added safety measures, personal protection equipment shortages, and reduced workforce to comply with social distancing guidelines. Alsharef et al. (2021); Katikireddi et al. (2021) found that worker absenteeism, recruitment and training of replacements, and cash flow challenges further exacerbated inefficiencies and productivity losses along with delays in inspections and securing permits due to the transition to remote work.

The transition to remote work for non-site personnel during the pandemic faced significant challenges due to inadequate digital infrastructure, requiring businesses to invest in technology like VPNs and cloud solutions (Alsharef et al., 2021). Additionally, many employees struggled with new digital tools, internet quality, and home distractions, impacting their productivity (Alsharef et al., 2021). The sudden transition to remote work presented challenges and opportunities, raising concerns about productivity, collaboration, and employee isolation (Kniffin et al., 2021). The pandemic led to widespread furloughs and layoffs in the construction industry, with workload reductions projected at 50-60%, raising concerns about a long-term skilled labor shortage (Alsharef et al., 2021). Workers also faced significant mental health challenges from job insecurity, financial stress, virus exposure anxiety, childcare responsibilities, and inadequate enforcement of safety measures, further exacerbating these stressors (Alsharef et al., 2021; Fairlie & Fossen, 2022).

2.   Impact of Pandemic on Disadvantaged Project Managers Specifically

Disadvantaged leaders in the construction industry face significant obstacles to successfully managing and leading projects. Despite progress toward diversity and inclusion, disadvantaged project managers are still not provided adequate mentorship, coaching, training, and opportunities. Disadvantaged

project managers face systemic barriers and challenges that hinder their ability to perform effectively (Powell & Underwood, 2019). One of the most significant obstacles is a lack of diversity within the industry, which can lead to a sense of isolation and exclusion for disadvantaged leaders. Nieto et al. (2024) identified key challenges such as entrenched biases, lack of support for women and minorities, and limited mentorship or sponsorship programs for underrepresented groups. Another barrier disadvantaged leaders face is the need to constantly prove themselves and their abilities to gain credibility and respect from their colleagues (Loosemore & Waters, 2021). Although these are the same challenges faced by disadvantaged project managers even before the pandemic, these challenges were further exacerbated due to COVID-19 pandemic. Kniffin et al. (2021) emphasized that mental health had become a significant issue, with many employees experiencing increased stress, burnout, and anxiety due to the pandemic's disruptions. Discrimination, implicit bias, and inadequate training are significant challenges that disadvantaged leaders in the construction industry often encounter, hindering their ability to lead effectively (Baral et al., 2022).

COVID-19 exposed the vulnerabilities of current systems, revealing inadequate preparation, delayed responses to scientific warnings, confusing communications, and slow trust-building (Bruinen De Bruin et al., 2020). Brown et al. (2020) concluded that disadvantaged workers faced increased health risks during the pandemic due to existing disparities. The research supports the argument that structural inequalities enhance occupational health outcomes for disadvantaged project managers. Government-collected data clearly shows that the pandemic disproportionately impacted female employees, driving many mothers to reduce their employment (Collins et al., 2021). Ausín et al. (2020) indicated that a greater psychological toll on women during the pandemic was due to the gendered division of labor and societal expectations, with women feeling more burdened by family duties, economic uncertainty, and health concerns. Technological adaptation, as emphasized by Sharifi et al. (2021), became vital in maintaining project continuity. The integration of digital tools was essential for crisis management and communication but posed challenges for managers with limited access to such resources.

3. Lessons from COVID-19 Pandemic Disruptions for Disadvantaged Project Managers on Building Adaptability and Resilience

Disadvantaged project managers in the construction industry have found that enhanced team dynamics and professional development were vital to maintaining effective performance during the COVID-19 pandemic (Avice et al., 2020). The same authors underscored the importance of early intervention, clear communication, and flexible work arrangements including adopting technology such as social distancing sensors or automatic sign-in devices to enhance adherence to safety protocols. Further research has shown that Performance under Crisis Conditions, Team Dynamics and Communication Professional and Career Resilience Diversity, Equity, and Inclusion (DEI) Initiatives, and Flexibility and Adaptability in Project Management are specific impacts that should be addressed to equip disadvantaged project managers for future crises.

Bouziri et al. (2020) analyzed through research that working from home during the pandemic significantly impacted physical and mental health, with poor ergonomic setups leading to musculoskeletal issues and social isolation along with blurred work-life boundaries, heightening stress and anxiety and recommended addressing these risks through ergonomic training, regular breaks, and mental health support programs. Disadvantaged project managers, especially from minority groups, faced added difficulties due to limited resources and support systems, hindering quick adaptation. Baral et al. (2022) investigated innovative strategies like digital project management tools and remote collaboration technologies, boosted efficiency in handling complex tasks under pressure, and underscored the critical role of technological competence for future resilience.

Many disadvantaged project managers turned to self-directed learning during the pandemic (Alkorashy & Alotaibi, 2023), taking advantage of online courses and virtual seminars to boost their skills in project planning, contract negotiation, and crisis management (Hansen, 2020). Patel et al. (2023) discussed establishing peer support networks to provide mentorship and guidance during uncertain times. Bondar et al. (2020) underscored the importance of continuous learning, e-learning, and professional networking in building career resilience and indicated that investing in upskilling and mentorship programs can better prepare project managers for future disruptions. According to research by Sherman et al. (2021), the pandemic compelled crisis managers to become more adaptable, devising creative solutions to meet deadlines despite facing material shortages, delayed inspections, and altered construction schedules.

Disadvantaged project managers can enhance their resilience and adaptability of the contract by protecting all stakeholders with agreed-upon contractual language, including force majeure clauses, extensions of time provisions, and cost-sharing agreements (Khalef et al., 2022). The researcher found that adopting digital technologies, such as Building Information Modeling (BIM) and remote project management tools, would help improve project efficiency and resilience in future crises. Further research found that innovative technologies, such as modular construction and prefabrication, helped improve project efficiency and reduce on-site labor requirements (Zhang & Skitmore, 2021). There is also a greater need for collaboration, communication, and flexible project management approaches to overcome the challenges posed by the pandemic. Institutionalizing all these strategies within future project management frameworks is essential to enhancing adaptability to potential disruptions.

Methodology

A phenomenological approach was employed to capture the lived experiences of disadvantaged project managers (Odongo & Ntara, 2024). The data for this study was collected through purposive sampling, a method in which participants were selected based on specific criteria relevant to the research objectives. Data was collected through semi-structured interviews, open-ended questionnaires, and focus groups. These methods facilitated the exploration of personal stories, strategies, and lessons learned. The purposive sample included project managers across Maryland, Virginia, Delaware, and D.C.

1. Data Collection

The survey was distributed to twenty-five project professionals of which only twenty responses were received and subsequently examined. Despite the small sample size, which is a limitation of the research, the study proceeded, recognizing the limited population and the specific nature of the research, with the aim of contributing valuable data to this investigation. The surveys were emailed out to the participants, and there were multiple-choice and open-ended questions that allowed them to share their experiences and perceptions of the impact of the pandemic on their project management practices. The participants were followed up through either in-person interviews or phone calls.

2. Data Analysis

The data collected from the interviews were transcribed verbatim and analyzed using thematic analysis. The analysis involved identifying patterns and themes in the data and organizing them into meaningful categories. The analysis followed a deductive approach, where the codes and themes were derived from the research questions and literature review.

Results and Discussions

The findings reveal that most respondents (70%) fall within the 31-50 age bracket, often associated with the digital era. This suggests they are likely familiar with the various technological tools used for remote work, minimizing the likelihood of encountering difficulties. Regarding gender distribution, 55% of participants identified as male, while 45% identified as female. The surveyed individuals represented various organizations in nature and size, with project management professionals constituting the largest group. Other roles included vice presidents, senior vice presidents, directors of field operations, and owners of disadvantaged businesses. Refer to Table 1 below.

Table 1. Demographics		
Average Year of Respondents' Experience	17	**# of Response**
Gender	Female	9
	Male	11
Age	20 – 30	2
	31 – 40	7
	41 – 50	7
	51 - 60	1
	Over 60	3
Career Position	Construction – Project Management	14
	Information Technology	1
	Other (Director, VP, President)	5
Number of Employees in the Organization	Less than 100	4
	100 – 1,000	1
	More than 1,001	15

The study results are outlined below and are divided into three subsections, each corresponding to the research questions mentioned in the introduction.

1. *What specific challenges do disadvantaged project managers face, focusing on performance, team dynamics, and professional development?*

Disadvantaged project managers faced significant performance challenges, including limited access to digital tools and increased scrutiny. The pandemic's disruptions to supply chains and workforce availability resulted in delays and increased stress. Sixteen of the twenty total surveyed disadvantaged project managers reported that they experienced additional stress and anxiety due to the pandemic. Several participants noted that they felt they had to work harder than non-disadvantaged project managers to prove themselves and that they were often subjected to additional scrutiny. These observations align with the findings from Bouziri et al. (2020) and Brown et al. (2020) which highlighted the disproportionate health risks faced by minority groups. The pandemic curtailed professional growth opportunities, particularly for disadvantaged project managers who had limited access to mentorship and training programs. Many turned to self-directed learning and online courses.

The most frequently reported challenge, cited by nine respondents, was managing complex team morale due to disparities in remote work conditions. Varying levels of access to resources, technology, and home workspaces, within a diverse team of construction workforce mostly favored

the traditionally advantaged project managers, which created friction and unequal productivity among team members. Another major concern, noted by eight respondents, was that the pandemic was used as a pretext for discriminatory practices against minorities which insinuates that some organizations may have leveraged the crisis to justify biases in hiring, promotions, and layoffs. Some additional insights and observations made through the verbatim transcription and analyzed using thematic analysis are presented in Table 2. Note that the frequency column does not sum to the total number of respondents (which is 20) because participants could provide multiple responses.

Table 2. Challenges faced by disadvantaged project managers

RQ1: What specific challenges did disadvantaged project managers face during COVID-19 pandemic?	Frequency
Complex team morale due to remote work disparities.	9
Pandemic was used as a pretext for discriminatory practices against minorities.	8
Lay-offs impacted minority employees more significantly.	3
With less opportunities to network, minorities struggled with motivation.	3
Smaller companies struggle with equipment, supply chain.	2
Create opportunities for minority project managers.	2
Stress of healthcare biases and COVID-19.	1
Lay-offs, home pressure, health risks.	1
Additional scrutiny for individuals in that category.	1

2.   What adaptive strategies have disadvantaged project managers employed during the COVID-19 pandemic?

All twenty participants reported that their management style had to change due to the pandemic. Several participants noted they had to be more flexible and adaptable to project schedules, timelines, and scope changes. The pandemic has shifted towards more remote management styles, with many project managers working from home. Some participants reported that this has led to a loss of direct control and oversight, making it challenging to manage projects effectively. However, others argue that the shift towards remote management has led to more frequent communication and increased transparency, ultimately improving project management. The rapid adoption of effective communication technology in the industry led to improved communication and collaboration between project team members, which mitigated some of the productivity losses in other areas of project management. Some of these notable observations from the interviews are presented in Table 3.

Table 3. Adaptive strategies adopted by disadvantaged project managers

RQ2: What adaptive strategies have disadvantaged project managers employed during the COVID-19 pandemic?	Frequency
Set goals, foster teamwork, enhance communication.	13
Cooperate, coordinate, and implement Lean Thinking.	7
Embrace diverse perspectives, respect, and empathy.	2
Adopt inclusive team approach with full buy-in.	1
Conduct trainings, check-ins, and effective employee evaluation.	1
Encourage diverse team, varied perspectives, collaborative problem-solving.	1
Create diverse teams, mentors, on-boarding programs.	1
Equalize staff responsibilities and support.	1

   3. *What steps can organizations take to support minority project managers during times of crisis, such as the COVID-19 pandemic?*

Construction organizations can create an environment where minority project managers are better supported, resilient, and equipped to lead effectively during times of crises such as the pandemic. Table 4 presents some of the narratives from the interviews.

Table 4. Strategies Organizations Can Adopt to Support Disadvantaged Project Managers

RQ3: What steps can organizations take to support minority project managers during times of crisis, such as the COVID-19 pandemic?	Frequency
Allow project managers to explore innovative ways of planning, communicating, coordinating, and executing work.	11
Avail appropriate resources to run projects (i.e. strong teammates, increase upper leadership support, provide more training and leadership development opportunities).	11
Improve communications and internet technologies throughout the project site to allow meetings on demand to resolve issues faster.	10
Provide flexibility in work hours, not overloading meetings but also have accountability for each day of what was accomplished.	5
Encourage the entire team to voluntarily look for innovative ideas/approaches such as pre-fabrication to progress the project forward.	5
Allow flexibility to strengthen leaders for success.	4
Allow technologies to change project management by saving employees commute time between job sites making meetings virtual.	3
Adopt flexibility allowing a PM to work remotely for 3 days and on-site for 2 days a week.	3
Share resources and virtual events that provide industry awareness and guidance.	2
Address social injustices, language barriers.	2
Increase leadership advancement opportunities.	2
Embrace remote work where necessary, emphasize better health and cleaner sites.	1
Enhance safety protocols.	1
Host virtual career events, forums.	1

Conclusion and Recommendations

This research aimed to address major disruptions in construction, beyond the COVID-19 pandemic, with a focus on projects led by disadvantaged managers to develop more resilient project management strategies. Although most of the strategies identified by disadvantaged managers in the survey also apply to projects managed by non-disadvantaged managers, it is especially important to recognize and address the unique challenges faced by disadvantaged managers, such as limited access to resources, financial constraints, and systemic inequities. Specific strategies that address the unique needs of disadvantaged project managers during disruptions such as mental health support, schemes for managing unnecessary scrutiny, and resources for balancing professional and personal demands are some of the findings of this research. Creating platforms and opportunities for minority project managers to build professional networks, even in virtual or hybrid settings are especially important during the times of remote work when they feel isolated. Establishing peer support networks and wellness programs to mitigate stress and improve mental health is equally important. Research by Sherman et al. (2021) emphasized that flexible team structures and iterative project planning were

crucial for navigating future disruptions which was something expressed by the participants of this research. To support disadvantaged project managers during crises, organizations should prioritize fostering innovation, improving access to resources and training, enhancing digital infrastructure, and providing flexible work environments.

References

Alfadil, M. O., Kassem, M. A., Ali, K. N., & Alaghbari, W. (2022). Construction Industry from Perspective of Force Majeure and Environmental Risk Compared to the COVID-19 Outbreak: A Systematic Literature Review. *Sustainability*, 14(3), 1135.

Alkorashy, H. A. & Alotaibi, H. A. (2023). Locus of Control and Self-Directed Learning Readiness of Nursing Students during the COVID-19 Pandemic: A Cross-Sectional Study from Saudi Arabia. *Nursing Reports (Pavia, Italy)*, 13(4), 1658–1670.

Alsharef, A., Banerjee, S., Uddin, S. M. J., Albert, A., & Jaselskis, E. (2021). Early Impacts of the COVID-19 Pandemic on the United States Construction Industry. *International Journal of Environmental Research and Public Health*, 18(4), 1559.

Ausín, B., González Sanguino, C., Castellanos, M., & Muñoz, M. (2020). Gender-related differences in the psychological impact of confinement as a consequence of COVID-19 in Spain. *Journal of Gender Studies*, 30, 1–10.

Avice, T., McLaughlin, M., & Vercler, C. (2020). COVID-19: Lessons from a construction site, can we apply one industry safety protocol to another? *Journal of Pediatric Rehabilitation Medicine*, 13(3), 433–437.

Baral, A., Liang, Y., Li, M., Gonzalez, M., Shahandashti, M., & Ashuri, B. (2022). Impact of COVID-19 on the Diversity of the Construction Workforce. *Natural Hazards Review*, 23(3).

Bondar, I., Gumenyuk, T., Horban, Y., Karakoz, O., & Chaikovska, O. (2020). Distance E-Learning in the System of Professional Development of Corporation Managers: Challenges of COVID-19. *Journal of Education and E-Learning Research*, 7(4), 456–463.

Bouziri, H., Smith, D. R. M., Descatha, A., Dab, W., & Jean, K. (2020). Working from home in the time of COVID-19: How to best preserve occupational health? *Occupational and Environmental Medicine*, 77(7), 509–510.

Brown, S., Brooks, R. D., & Dong, X. S. (2020.). Coronavirus and Health Disparities in Construction. *The Center for Construction Research and Training (CPWR.)*

Bruinen De Bruin, Y., Lequarre, A.-S., McCourt, J., Clevestig, P., Pigazzani, F., Zare Jeddi, M., Colosio, C., & Goulart, M. (2020). Initial impacts of global risk mitigation measures taken during the combatting of the COVID-19 pandemic. *Safety Science*, 128.

Collins, C., Landivar, L. C., Ruppanner, L., & Scarborough, W. J. (2021). COVID-19 and the gender gap in work hours. Gender, *Work & Organization*, 28, 101–112.
Fairlie, R., & Fossen, F. M. (2022). The early impacts of the COVID-19 pandemic on business sales. *Small Business Economics*, 58(4), 1853–1864.

Fournier, E., Scott, S., & Scott, D. E. (2020). Inclusive Leadership During the COVID-19 Pandemic: *How to Respond Within an Inclusion Framework Elaine Fournier.*

Hansen, S. (2020). Does the COVID-19 Outbreak Constitute a Force Majeure Event? A Pandemic Impact on Construction Contracts. *Journal of the Civil Engineering Forum*, 6(1), 201.

Katikireddi, S. V., Lal, S., Carrol, E. D., Niedzwiedz, C. L., Khunti, K., Dundas, R., Diderichsen, F., & Barr, B. (2021). Unequal impact of the COVID-19 crisis on minority ethnic groups: A framework for understanding and addressing inequalities. *Journal of Epidemiology and Community Health*, 75(10), 970–974.

Khalef, R., Ali, G. G., El-adaway, I. H., & Gad, G. M. (2022). Managing construction projects impacted by the COVID-19 pandemic: A contractual perspective. *Construction Management and Economics*, 40(4), 313–330.

Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., Bamberger, P., Bapuji, H., Bhave, D. P., Choi, V. K., Creary, S. J., Demerouti, E., Flynn, F. J., Gelfand, M. J., Greer, L. L., Johns, G., Kesebir, S., Klein, P. G., Lee, S. Y., … Vugt, M. V. (2021). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76(1), 63–77.

Konzula, A., & Tolic, I. (2021). The Impact of COVID-19 Pandemic on Accelerated Digitization of the Economy. *International University Travnik Science and Technology*, IX(15), 96–100.

Loosemore, M., & Waters, T. (2021). The role of positive discrimination in the construction industry. *Construction Management and Economics*, 39(8), 676-691.

Nieto, A., Murzi, H., Akanmu, A., Yusuf, A., Ball, S., Saad, W., & Ofori-Boadu, A. (2024). Challenges and Opportunities to Address Diversity, Equity, and Inclusion within the Professional Construction Industry.

Odongo, I., & Ntara, C. (2024). Role of phenomenology in management research. *International Journal of Management Concepts and Philosophy (IJMCP)*, Vol. 17, No. 4.

Patel, K. N., Lincoln, B., Gomez, L. A. M., Lopez, A. C., Ting, T., Lund, T. J., & Liang, B. (2023). MentorOn: A peer mentoring program developed for COVID-19 times. *Journal of Community Psychology*, 51(8), 3152–3170.

Powell, L.& Underwood, N. (2019). Challenging the Status Quo: Innovate or Detonate. NSW. Rani, H. A., Farouk, A. M., Anandh, K. S., Almutairi, S., & Rahman, R. A. (2022). Impact of COVID-19 on construction projects: The case of India. *Buildings*, 12(6), 762.

Sharifi, A., Khavarian-Garmsir, A. R., & Kummitha, R. K. R. (2021). Contributions of Smart City Solutions and Technologies to Resilience against the COVID-19 Pandemic: A Literature Review. *Sustainability*, 13(14), 8018.

Sherman, B. W., Kelly, R. K., & Payne-Foster, P. (2021). Integrating Workforce Health Into Employer Diversity, Equity and Inclusion Efforts. *American Journal of Health Promotion*, 35(5), 609–612.

Wu, G., HU, Z., & Zheng, J. (2019). Role Stress, Job Burnout, and Job Performance in Construction Project Management, *International Journal of Environmental Research and Public Health*.

Zhang, L. & Skitmore, M. (2021). Innovations in construction during COVID-19: The use of prefabrication and modular construction. *Journal of Construction Engineering and Management*, 147(11).