OJ-TP

http://publisher.uthm.edu.my/ojs/index.php/ojtp
e-ISSN : 2289-7410

Online Journal for TVET Practitioners

A Review of Dimension in Human Capacity Development for Construction Projects

Elmi Alif Azmi[1*], Che Khairil Izam Che Ibrahim[1]

[1]School of Civil Engineering, College of Engineering,
Universiti Teknologi MARA, Shah Alam, 40450, MALAYSIA

*Corresponding Author

DOI: https://doi.org/10.30880/ojtp.2023.08.03.005
Received 11 June 2023; Accepted 15 November 2023; Available online 23 November 2023

Abstract: The ability of engineers to adapt and compete is crucial for the success and effectiveness of an organisation. Human capacity development (HCD) has been acknowledged as a concept to improve individual and team skills in setting goals and maintaining the competencies needed to survive and thrive in a rapidly changing world. Therefore, it is important to focus on HCD in order to strengthen engineers for long-term efficiency. Although previous studies have primarily focused on environmental and economic dimensions, the social dimension, specifically HCD, has received less attention. This paper aims to identify the attributes of HCD in sustainable construction during different phases of a construction project's life cycle. A systematic literature review was conducted to identify and critically evaluate papers related to HCD. The attributes identified as important for improved company or agency performance include Leadership, Knowledgeability and Accountability. Based on these findings, management initiatives to apply HCD can improve performance among civil engineers.

Keywords: Human Capacity Development, attributes of capacity development, civil engineers

1. Introduction

Human capacity development is necessary for building and maintaining the capabilities of various firms, communities, and individuals related to this understanding of human capacity. It also facilitates the establishment or improvement of frameworks that will enable specific individuals, communities, and organizations to reach their full potential. Each human development strategy aims to improve expertise in a variety of critical tasks, solve difficulties, identify, and attain goals, focus on individual knowledge bases, skills, attitudes, competencies, and talents, and expand and reinforce individual and organizational networks (Pollyn, Barinua & Agi, 2016).

The goals of a human development strategy are to perform critical tasks, solve challenges, identify, and achieve goals, and focus on an individual's knowledge base, skills, attitudes, abilities, and abilities while improving skills to expand at the same time. Human capacity development has received so much attention that international development agencies have created criteria and programs to improve human capacity building as one of the nations' developmental indices (Pollyn et. al, 2016). Nowadays, human capacity is a primary thing that should be taken seriously. This is because human capacity includes all of the ability of individuals, organizations, or systems to perform the necessary activities in an effective, efficient, and long-term manner in achieving their goals (Benard, 2014). It also encompasses the abilities, skills, understandings, attitudes, values, connections, behaviours, motives, resources, and conditions that allow individuals, organizations, networks/sectors, and larger social systems to function and achieve long-term development goals (Bolger, 2000).

Civil engineers in a government sector or agencies will be selected according to the company's needs and scope. Usually, government agencies will restrict in choosing their engineers and staff according to their chances of gaining

*Corresponding author: aelmialif@uitm.edu.my

new experience. To address the above-mentioned deficiency, this study aims to identify the attributes of human capacity building of civil engineers. Furthermore, HCD is to analyse the attributes of human capacity building.

Construction industry is the top industry that contributes significantly to many countries' gross domestic products (GDP). Although construction industry promotes economic development, it is one of the most critical industries which involves multifaceted projects and requires expertise and manpower to undertake detailed construction work, design, and planning. Understanding the important role of these value systems in determining quality of work is a key to address the significant factors in the sustainable construction project as to ensure the successfulness of the construction project related to sustainable construction (Li, Ng, Skitmore & Li, 2016). However, past HCD studies merely emphasized during the construction phase and neglecting the pre-planning stage and post-construction phase (Varela, Armiñana & Piqueras, 2015; Vasquez & klotz, 2013; Vasquez & Klotz, 2010). In the field of construction and project management, there has been a growing recognition of the importance of considering Human Capacity Development (HCD) throughout the entire project lifecycle, rather than just during the construction phase. This approach is often referred to as a "whole-of-life" or "whole-of-project" perspective (Le, Domingo, Macgregor and Potangaroa, 2022). HCD can be explained as an ability or capabilities of someone or an organization. The capabilities include the ability in making decisions and conducting task based on decision made (Nnenna 2015; Olakitan Atanda 2018). According to Pollyn, Barinua, and John (2016), HCD can be described as a process of developing the ability of people to explore a new idea and increase the ability above from ordinary norm. The process comprises the things that need to be done and what elements are needed which act as catalyst in developing the ability. There are a few elements that have been widely mentioned such as knowledges (Seymen and Bolat 2010; Sodangi 2019), skills (Dariah et al. 2020; Potter and Brough 2004; Zuo et al. 2012), behaviour (Li et al. 2016; Sierra, Yepes, and Pellicer 2017; Yildiz, Kivrak, and Arslan 2019) and energy (Pocock, Steckler, and Hanzalova 2016; Šlaus and Jacobs 2011). Every element has been studied which brought to finding regarding the contribution for every of the element which can contribute in HCD development.

By synthesizing the previous studies with regards to sustainable development, the research on the human capacity development is still lacking especially on evaluation and development on human capacity. The main elements of sustainable constructions which are social, economy, and environmental should be properly addressed incorporate with the human capacity development. The establishment of this human capacity development framework is vital considering the role that plays in advancing the sustainable construction in assessing the competency and increasing the capabilities to support the successfulness of the sustainability development goal agenda. Most of the previous study focused on the upgrading the implementation of the infrastructure and system that help to build towards the successfulness of the sustainable construction. However, the competency of the human capabilities is vital to drive the for sustainable constructions and that is where the gaps of the research should be filled.

This paper highlights the framework for the human capacity development for civil engineers in advancing sustainable construction and used the standard assessment tool for a proper, independent, and transparent evaluation of capacity development along construction project. With an appropriate scale and evaluation process, each attribute can be assessed either on the performance and the suggestion of continuous improvement may benefit a lot of parties including public and private entities who involved in the construction project.

2. Research Methodology

This study approaches every aspect of conducting this research, such as identifying the problem statement, objectives, and a review of previous studies on the topic. The process flow of conducting this study were discussed based on Table 2 and Table 3. This study adopted a three-step literature review approached (i.e., identification of database and journal, selection of target articles, and examination of the target articles via scientometric approach) summarizing the HCD research in the construction domain.

2.1 Phase 1: Identification of Journal

Phase 1 of the bibliometric search was conducted through the online database. Refer to Oliveira, Barros, Pareira, Gomez and costa (2018), SCOPUS database was used due to its size compared to other databases (e.g., Web of Science or Google Scholar). It has a broader range of multidisciplinary articles coverage, comprehensive and greater access to the recently published work. The "Scopus" search engine was used to perform the search via "titles/abstract/keyword" based on keywords of HCD related terminologies and construction. In an example, Table 1 shows the "keyword" used in identified a journal. To demonstrate the level of attention on the HCD subject in the construction engineering and management (CEM) research, the HCD related keywords were referred from previous HCD related studies in construction context. The complete search string is listed as follows: TITLE-ABS-KEY ("Human Capacity" OR " Capacity development" OR " Human capacity development" OR "capabilities dimension" OR "capacity development in construction" OR "social impact assessment" AND "construction project". The data for this study were retrieved from the SCOPUS database on May 28, 2022, and covers articles published from 1974 until 2022. Initially, 91 documents were found, and further screening was carried out to exclude articles that have duplications, incomplete details, non-English language and book chapters, conference publications (See Table 2). Conference articles were

excluded from the sample due to limited information published in such publications, and also conference articles tend to be subsequently published in journals with greater depth of information. The initial screening in Phase 1 returned 91 articles from a few of different publications outlets.

2.2 Phase 2: Screening

In Phase 2, the 46 articles were subjected to a more thorough screening. The following inclusion criteria were used to ensure the relevance of the articles: the article should be specifically related to HCD practices in the construction industry; and the article should focus at least on either the concept, application, or process of HCD in construction. Any article that focuses on the context of construction dimension (e.g., human capacity, human capacity development, capabilities' dimension, and social impact assessment) but does not fully emphasise the HCD was excluded. The keywords, abstract, and title of the article, as well as the content of the article (if necessary), were examined to ensure that the articles met the criteria. Publications that did not fall within the scope of the study (see exclusion criteria in Table 3) were excluded. Following the Phase 2 screening, the number of relevant articles was reduced to 46. Furthermore, the snowball method was used to identify relevant articles that were not captured by the keywords in the Scopus database as well as outside the database, resulting in an additional 43 articles from journals. The traditional snowball sampling method relies on a chain referral process to expand the sample from initial seed which is the main keywords for the study to referral chains and continued referrals. Constrained snowball sampling, which involves limiting the percentage of articles collected at each stage, emerges as a viable and efficient solution. It enables robust citation analysis while working with a small portion of the available data. This exercise was carried out to supplement the findings of the first two-phase search, and hence ensuring any significant state-of-the-art works related to HCD studies were included for the reviewing exercise. Finally, a total of 89 articles from 21 different journals were selected for the scientometric analysis.

2.3 Phase 3: Eligibility

In Phase 3, a relevant of HCD articles or materials only used after a few of screening phase. Researcher only used the articles that only had a related topic, abstract and criteria. Table 1 and Table 2 shows an eligibility phase until included phase. In the other hand, only selected articles/proceeding that related with a case study. Eligibility criteria are critical in ensuring the quality, relevance, and reliability of the chosen paper when screening the best journal paper to be selected as a reference for research. Multiple significant variables should be taken into consideration during this process. Firstly, the selected paper must be pertinent to the research topic or question being investigated, closely aligning with the specific field of study and contributing valuable insights, data, or theories to the research objectives. Furthermore, the paper should be of high quality and rigor, having undergone a rigorous peer-review process to ensure the validity of its research methodology, the accuracy of its data, and the support for its conclusions through evidence. Assessing the journal's reputation and impact factor can provide insight into the publication's overall quality. It is also important to review the authors' credentials, affiliations with reputable institutions, and previous publications in the field to determine their credibility and expertise. Esteemed researchers and institutions contribute to the paper's trustworthiness and expertise.

2.4 Phase 4: Scientometric Analysis

This review study using a method of Systematic Literature Review (SLR) with scientometric analysis of the 89 articles. SLR Table is designed to maps and assesses the existing knowledge and gaps on specific issues which will further develop the knowledge base. Systematic literature review (SLR) differs from traditional narrative reviews by adopting replicable, scientific, and transparent producers. It helps to collect all related publications and documents that fit our pre-defined inclusion criteria to answer a specific research question. It uses unambiguous and systematic procedures to minimize the occurrence of bias during searching identification, appraisal, synthesis, analysis, and summary of studies. When the procedure is done properly and has minimal error, the study can provide reliable findings and reliable conclusion that could help decision-makers and scientific practitioners to act accordingly. Thus, this study adopted through every phase for scientometric analysis in visualizing, and analysing the influence of authors, countries, organisations, keywords, sources of documents in the field of HCD research in the construction industry. Table 1 portrays the distribution of the keywords in the article to find the relevant paper with regards to the study. Then the process continues with Table 2 which illustrates the protocol systematic literature review for other sources. The SLR protocol comprises four distinct phases, each of which involves a meticulous filtering process to select articles and journals that are pertinent to the study.

3. Results and Discussions

The process described above resulted several steps of systematic literature review (SLR) which creates the HCD framework for sustainable constructions industry. The review process of documenting the literature and experiential knowledge shows that in developing HCD model would need many steps to describe the multidimensional process and

practices. However, some of the processes represented were found to be repetitive. Thus, further analysis on the attributes section must be done to identify the most significant variables were applied for HCD framework development. The SLR protocol comprises four distinct phases as illustrates in Table 2, each of which involves a meticulous filtering process to select articles and journals that are pertinent to the study. Key outcomes and results of the process of development the HCD framework are presented below:

Table 1 - Distribution of keywords in article

No	Keywords	No of Article
1	Human Capacity	113
2	Capacity development	166
3	Human Capacity Development	6
4	capabilities development	103
5	social impact assessment	7
6	Construction project	528
7	Others keyword, i.e.: sustainable development (3),	7
	Total	**930**

Table 2 - Protocol of systematic literature review

Phase	Database	Scopus	WoS	Total
1st phase Identification	Search String: TITLE-ABS-KEY ((“Human Capacity*” OR “capacity development*” OR “human capacity development*” OR “capabilities development” OR "capabilities dimension*" OR “social impact assessment”) AND (“construction project*”))	**91**	**109**	**200**
2nd phase Screening	Exclude books, book series, others language, not related year	(-)5	(-)23	**(-) 28**
	Total of papers	**46**	**86**	**172**
	Document Type: Journals	21	25	**46**
	Document Type: Conference proceedings	22	16	**38**
3rd phase Eligibility	Relevant title, keywords, abstracts using criteria	**2**	**5**	**7**
4th phase Included	Full paper analysis and synthesis (articles directly related with issues of human capacity development only)	**1**	**3**	**4**
	Redundant articles (Scopus and WoS)	(-) 0		
	Total articles	**Journal**	**Conference proceeding**	
		46	**38**	

3.1 Human Capacity Development Attributes

Human Capacity Development (HCD) can be explained as an ability of someone or an organization. The ability include ability in making decision and conducting task based on decision made. Many researchers explain the definitions of capacity development from different perspectives which describes on approach or process and some of them see as an individual or organizational development in terms of its capacity in improving performance (Bolger, 2000). There are a few elements that have been widely mentioned such as knowledges, skill, behaviour and energy (Nwankwo & Okorie, 2015). Every element has been studied which brought to finding regarding the contribution for every of the element which can help in developing HCD (Konduri, Rauscher, Wang & Llanos, 2017; Petersen & Kadefors, 2016). Table 1 shows a summary table regarding an overview of HCD from different perspectives related to the issues. From the overview, it has been found that HCD attributes lies in these three selected core elements which are leadership, knowledge, and accountability. Details on the core issues highlighted was discussed further.

Table 3 - Summary of literature review in HCD

No	HUMAN CAPACITY DEVELOPMENT CLUSTER	Leadership							Knowledge						Accountability							
	HUMAN CAPACITY DEVELOPMENT ATTRIBUTES	Agility (Learning)	Staffing	Integrity	Influence	Empathy	Courage & Knowledgeable	Gratitude	Technology Intellect	Good Judgement	Agility (Independent)	Good Softskill	Positive thinking	Facilitates and Measures	Endurance in managing	Open-minded for opinion	Responsible	Optimism expressive	Innovation	Clarity external trend	Devoted
1	[11]	1		1		1			1					1		1					
2	[12]	1						1	1	1		1			1		1	1	1	1	
3	[13]			1			1							1					1		
4	[14]	1							1						1	1	1		1	1	
5	[15]		1	1	1		1		1		1				1		1	1	1	1	1
6	[16]	1												1		1				1	1
7	[17]			1	1		1							1					1		
8	[18]	1			1				1	1										1	
9	[19]		1	1	1			1		1						1	1	1		1	
12	[20]	1		1					1	1	1		1			1	1			1	1
13	[21]			1		1		1		1		1		1	1			1		1	1
15	[22]			1							1					1	1				
16	[23]	1							1					1		1				1	1
17	[24]	1							1	1						1	1			1	
18	[25]	1		1	1						1				1	1	1	1	1	1	1
19	[26]		1	1			1							1		1	1				1
21	[4]			1					1	1	1						1			1	
22	[20]			1							1					1	1			1	1
24	[27]			1				1		1				1				1	1	1	
25	[5]	1	1	1	1		1		1		1				1	1	1	1	1	1	1
28	[28]				1			1	1	1		1				1	1			1	
29	[29]	1												1		1				1	1
31	[30]	1	1	1			1	1		1		1	1			1	1			1	
32	[31]	1		1					1		1	1	1	1		1	1			1	1
35	[32]	1		1	1		1		1		1			1		1		1			1
36	[33]			1		1		1				1				1	1			1	
HCD attributes		**17**	**5**	**20**	**9**	**3**	**7**	**7**	**15**	**11**	**9**	**6**	**7**	**12**	**8**	**19**	**18**	**10**	**9**	**15**	**11**

3.2 Leadership

When analyzed in terms of organizational levels, it has been demonstrated that leadership is a significant factor in accounting for differences in performance and is also a powerful remedy for driving organizational growth and transformation. In thinking about future leadership, it is important to reflect on the qualities of effective (and ineffective) leaders and the career path(s) that will lead to leadership roles. Mentioned by Lockwood (2015), the core values of an effective leader include courage, honesty, respect for others, trust, integrity and authenticity (Jackson, Tarhini, Zelmanowitz & Zapalska, 2016). Al Khajeh (2018) defined leadership as an individual behavior as the use of leading strategy to motivate and inspire their staff's potential for growth and development. Leadership has been applied in various human activities such as business, politics, and social works and the environment's characteristics itself. Leadership also can be seen as one of the important factors that play a significant role in increasing or impeding for an organization towards its performance. Leaders are decision makers which can be seen through their productive actions (Lazear, 2009). Leaders are the most important people in the company where they are the drivers of the company performance. Additionally, Ogbonna and Harris (2000) stated that leadership can contribute towards major determinants of the success or failure of a group, organization, or even the entire country. In Leadership's Clusters, there are seven attributes listed namely agility, staffing, integrity, influence, empathy, courage and knowledge, and gratitude. From these seven attributes, integrity has the most numbers cited and it shows how importance this attributes in contributing a good leadership towards capacity development.

3.3 Knowledgeability

A good of knowledge application can be seen through the growing number of knowledge research. 'Knowledge' is defined as the information and concepts that can be acquired through observation, reading and study, and can be shared while 'Skills' refers to the ability to apply knowledge effectively in a particular context and to adapt previous understanding to changing conditions (Taylor, Erkelenz and Churchill (2020). Kao, Wu and Su (2011) stated that knowledge may lead towards successful organization where it can change the way business had been conducted and change thinking behavior thus, will impact the company's performance. It has been found that knowledge act as the key critical factor in the process of developing performance to achieve towards sustainable development. Knowledgeability in capability development refers to the emphasis on acquiring and expanding knowledge as a fundamental aspect of developing and enhancing capabilities. It emphasizes the development of a learning mindset and the continuous pursuit of knowledge. This entails actively seeking opportunities to gain new knowledge and skills through various means such as formal education, training programs, and collaboration with experts. Furthermore, knowledgeability emphasizes the importance of knowledge sharing within the organization, knowledge transfers between individuals and teams, and cultivating a culture of collaboration and collective intelligence. Research and innovation play a significant part in encouraging the exploration of new ideas, technologies, and methodologies to improve existing capabilities or develop new ones. The application of knowledge in practical contexts, combined with regular evaluation and feedback, ensures that capabilities are refined and improved. Individuals and organizations that embrace knowledgeability foster a culture of continuous learning, adaptability, and innovation, allowing them to effectively develop and enhance their capabilities and stay ahead in dynamic environments.

3.4 Accountability

Another core issue related to HCD is the accountability. It highlights the exploration of the broad areas and concept of accountability. Companies are continuing to strengthen their corporate governance system by focusing on accountability as one of the key components highlighted Solomon (2020). Current understandings of the implications for accountability are examined based on the decision-making process which include standardization, transparency, and capacity building (Hughes, Giest and Tozer, 2020). Define by Gorman and Ward (2020), accountability is an area of corporate governance which has enduringly drawn the attention of policymakers and scholars. It has been used as the best governance practice guidelines and has also been recognized as a fundamental component of successful organizations (Donald, Rezania & Baker, 2020; Tetlock, 1985). Donald, et al (2020) do agree that accountability is defined as "being answerable to audiences for performing up to prescribed standards, thereby fulfilling obligations, duties, expectations and other charges". It can be seen that accountability plays a vital role to flourish the organization in moving towards sustainable construction performance.

4. HCD Conceptual Framework

The relationships between knowledgeability, accountability, and leadership are crucial to an organization's ability to navigate the challenges and opportunities presented by IR 4.0 while contributing to the SDGs. By fostering knowledgeability, promoting accountability, and providing effective leadership, organizations can increase their capacities, leverage technology for sustainable development, and contribute to a future that is more inclusive, equitable, and environmentally conscious. The relationships between knowledgeability, accountability, and leadership are interconnected and mutually reinforcing, and they play critical roles in enhancing an organization's capabilities.

Knowledgeability serves as the foundation for capacity development by providing the necessary knowledge, expertise, and skills to drive growth and success. Individuals and teams are better equipped to fulfill their roles, make informed decisions, and innovate when they have relevant knowledge. Knowledgeability fosters a culture of continuous learning, allowing businesses to adapt to changing environments and capitalize on opportunities. Accountability contributes significantly to capacity development by fostering a sense of responsibility and driving performance enhancement. Individuals are motivated to acquire the necessary knowledge and skills to meet expectations when they are held accountable for their actions and outcomes. Individual and collective learning is promoted by accountability, as individuals strive to improve their performance and contribute to a company's goals. It promotes the effective application of knowledge and abilities, as individuals are aware of their responsibilities and take proactive steps to fulfill them. Leadership is critical in driving organizational capacity development. Effective leaders provide the vision, direction, and guidance necessary to build and enhance the organizational capabilities. They foster a culture of continuous learning and knowledge sharing by making resources and opportunities for skill development available. Leadership promotes accountability by establishing clear expectations, holding individuals accountable for their responsibilities, and providing feedback. Leaders foster growth, collaboration, and continuous improvement by inspiring and motivating both individuals and groups. Knowledge, accountability, and leadership are interdependent components of capacity development. Knowledge provides the intellectual foundation, accountability promotes personal responsibility, and leadership establishes the vision and direction. Should these factors operate in concert, organizations are able to develop their capacities efficiently, adapt to change, and achieve sustainable success.

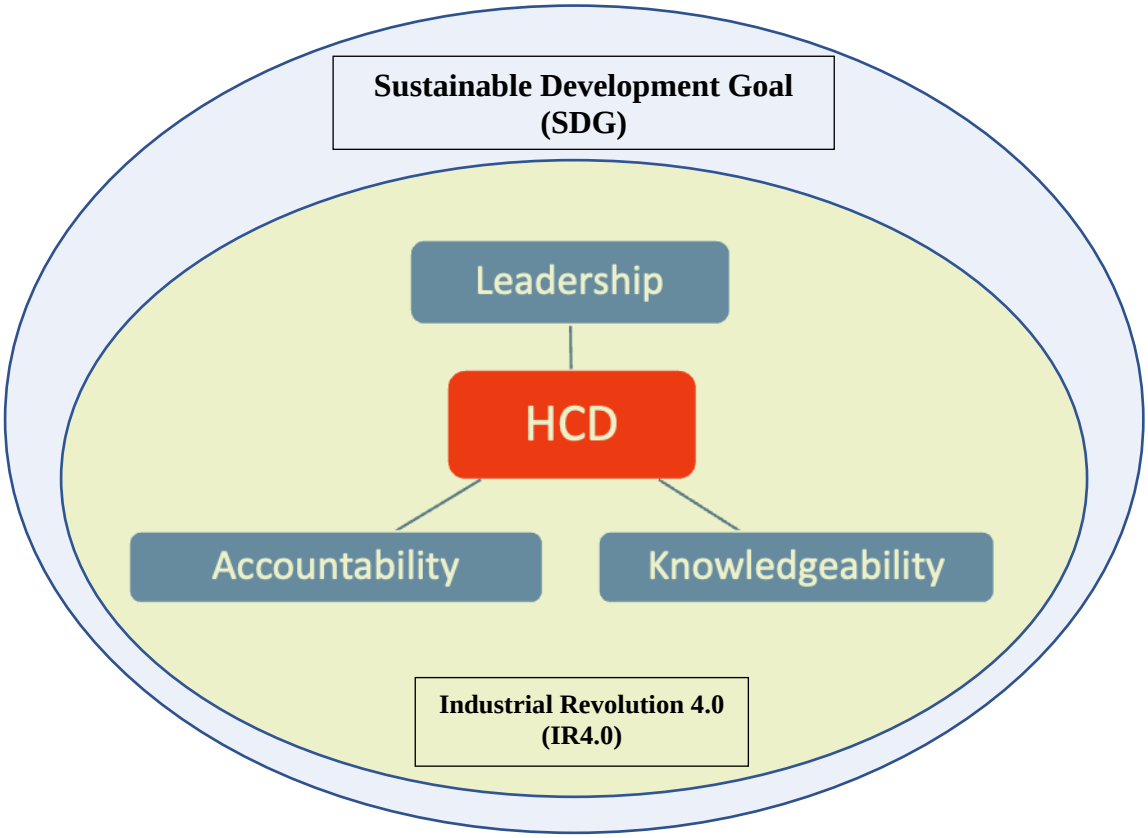

Fig. 1 - Conceptual framework for HCD integrated with IR4.0 and SDG

5. Conclusion

In conclusion, based on the results of this research, a summary of the first objective of the research, which is to identify current practices of human capacity building attributes for civil engineers, has been achieved. This research has determined that three out of five current attributes used in government agencies for civil engineers nowadays, such as experience, skills, and leadership practices, are currently in use. This current practice will be very effective in enhancing the human capacity building of civil engineers. This study focused on the civil engineers in government agencies to identify the human capacity development needs for civil engineers and enhance the human capacity development for civil engineers to be more professional as experienced engineers. As a recommendation, this study should be enhanced in the future to include more in-depth enhancements to human capacity development in the industrial field. Therefore, this is important for the future because future researchers will be able to define what human capacity development is for all parts of engineers for them to be more qualified and perform in their industry. Further

researchers should focus on the human capacity development for all engineers, either in consultant or construction. The steps involved in establishing new HCD model towards a sustainable construction must be considered as a part of comprehensive set of processes, practices and behaviours encompassing HCD selection through individual or team members to enhance a good performance and functionality of constructions industry. This framework should be emphasized further as a part of strategic response and stage in performing a good workforce development.

Acknowledgment

The authors fully acknowledged Universiti Teknologi MARA for supporting this work.

References

Pollyn, B. S., Barinua, V., & Agi, C. (2016). Human capacity building and sustainable development in Nigeria: A value base analysis. *Best International Journal for African Universities, 3*(2), 63-79.

Bernard, A. (2014). Capacity Analysis and Capacity Development. In *Engineering for Sustainable Human Development* (pp. 291-318).

Bolger, J. (2000). Capacity development: why, what and how. *Capacity Development Occasional Series, 1*(1), 1-8.

Li, T. H., Ng, S. T. T., Skitmore, M., & Li, N. (2016). Investigating stakeholder concerns during public participation. *Proceedings of the Institution of Civil Engineers-Municipal Engineer, 169*(4), 199-219.

Sierra Varela, L. A., Pellicer Armiñana, E., & Yepes Piqueras, V. (2015). Social sustainability in the lifecycle of Chilean public infrastructure. *Journal of Construction Engineering and Management, 142*(5), 05015020-1-05015020-13.

Le, A. T. H., Domingo, N., Macgregor, C., & Potangaroa, R. (2022). Developing a Framework for Construction Sector Capacity. *Construction Economics and Building, 22*(4), 17-35.

Valdes-Vasquez, R., & Klotz, L. (2010). Considering Social Dimensions of Sustainability During Construction Project Planning and Design. *Int. J. Environ. Cultural Econ. Soc. Sustainability, 6*, 167-180.

Valdes-Vasquez, R., & Klotz, L. E. (2013). Using the concept-mapping method for empirical studies in construction research. *Journal of Construction Engineering and Management, 139*(10), 04013002.

Nwankwo, C., & Okorie, E. N. (2015). Human capacity building and sustainable development in the 21st century: Implications and challenges in Nigeria. *Journal of Business and Management, 17*(7), 17-24.

Konduri, N., Rauscher, M., Wang, S.-C. J., & Malpica-Llanos, T. (2017). Individual capacity-building approaches in a global pharmaceutical systems strengthening program: a selected review. *Journal of Pharmaceutical Policy and Practice, 10*(1), 1-13.

Petersen, D., & Kadefors, A. (2016). Social procurement and employment requirements in construction. *Management, 2*, 1045-1054.

Wahab, S., Rahmat, A., Yusof, M. S., & Mohamed, B. (2016). Organization performance and leadership style: Issues in Education Service. *Procedia-Social and Behavioral Sciences, 224*, 593-598.

Renko, M., El Tarabishy, A., Carsrud, A. L., & Brännback, M. (2015). Understanding and measuring entrepreneurial leadership style. *Journal of Small Business Management, 53*(1), 54-74.

Shafiu, A. M., Manaf, H. A., & Muslim, S. (2019). The impact of leadership on organizational performance. *International Journal of Recent Technology and Engineering, 8*(3), 7573-7576.

Holten, A.-L., & Brenner, S. O. (2015). Leadership style and the process of organizational change. *Leadership & Organization Development Journal.*

Gipson, A. N., Pfaff, D. L., Mendelsohn, D. B., Catenacci, L. T., & Burke, W. W. (2017). Women and leadership: Selection, development, leadership style, and performance. *The Journal of Applied Behavioral Science, 53*(1), 32-65.

Zehir, C., & Narcıkara, E. (2016). Effects of resilience on productivity under authentic leadership. *Procedia-Social and Behavioral Sciences, 235*, 250-258.

Danişman, Ş., Tosuntaş, Ş. B., & Karadağ, E. (2015). The effect of leadership on organizational performance. In *Leadership and Organizational Outcomes* (pp. 143-168).

Sodangi, M. (2018). Social sustainability efficacy of construction projects in the pre-construction phase. *Proceedings of the Institution of Civil Engineers-Engineering Sustainability, 172*(2), 57-67.

Zulch, B. (2014). Leadership communication in project management. *Procedia-Social and Behavioral Sciences, 119*, 172-181.

Wang, Y., Han, Q., De Vries, B., & Zuo, J. (2016). How the public reacts to social impacts in construction projects? A structural equation modeling study. *International Journal of Project Management, 34*(8), 1433-1448.

Tabassi, A. A., Argyropoulou, M., Roufechaei, K. M., & Argyropoulou, R. (2016). Leadership behavior of project managers in sustainable construction projects. *Procedia Computer Science, 100*, 724-730.

Quinn, R. W., & Quinn, R. E. (2016). Change management and leadership development have to mesh. *Harvard Business Review, 1*(7), 2-4.

Obiwuru, T. C., Okwu, A. T., Akpa, V. O., & Nwankwere, I. A. (2011). Effects of leadership style on organizational performance: A survey of selected small scale enterprises in Ikosi-Ketu council development area of Lagos State, Nigeria. *Australian Journal of Business and Management Research, 1*(7), 100.

Lockwood, J. (2015). Virtual team management: what is causing communication breakdown? *Language and Intercultural Communication, 15*(1), 125-140.

Al Khajeh, E. H. (2018). Impact of leadership styles on organizational performance. *Journal of Human Resources Management Research, 2018*, 1-10.

Mbachu, C. E., & Dorgu, T. E. (2014). Making the Nigerian School Environment and Curriculum More Functional and Responsive for Human Capacity Development for the Year 2020. *Journal of Curriculum and Teaching, 3*(1), 28-35.
Love, P. E., Teo, P., Davidson, M., Cumming, S., & Morrison, J. (2016). Building absorptive capacity in an alliance: Process improvement through lessons learned. *International Journal of Project Management, 34*(7), 1123-1137.

Dong, Y. H., & Ng, S. T. (2015). A social life cycle assessment model for building construction in Hong Kong. *The International Journal of Life Cycle Assessment, 20*(8), 1166-1180.

Valentin, V., & Bogus, S. M. (2015). Assessing the link between public opinion and social sustainability in building and infrastructure projects. *Journal of Green Building, 10*(3), 177-190.

Moyo, T. (2018). Development of human capital for industrialization: drawing on the experiences of best performers. *Africa Development, 43*(2), 107-127.

Jackson, H., Tarhini, K., Zelmanowitz, S., & Zapalska, A. (2016). The resilient Civil engineer with the changing global environment. In *2016 IEEE Frontiers in Education Conference (FIE)* (pp. 1-9).

Valdes-Vasquez, R. (2011). Social sustainability considerations during planning and design: A framework of processes for construction projects. *Clemson University.*

Ali, Z., Zhu, F., & Hussain, S. (2018). Risk Assessment of Ex-Post Transaction Cost in Construction Projects Using Structural Equation Modeling. *Sustainability, 10*(11), 4017.

Jack, H. E., et al. (2020). Developing sustainable capacity-building in mental health research: implementation outcomes of training of trainers in systematic reviewing. *Global Health Action, 13*(1), 1715325.

Lazear, E. P. (2009). Firm-specific human capital: A skill-weights approach. *Journal of Political Economy, 117*(5), 914-940.

Ogbonna, E., & Harris, L. C. (2000). Leadership style, organizational culture and performance: empirical evidence from UK companies. *International Journal of Human Resource Management, 11*(4), 766-788.

Taylor, J. A., Erkelenz, P. A., & Churchill, A. C. (2020). Building human capacity, capability and future leaders for Australia's rangelands. *The Rangeland Journal, 42*(5), 277-292.

Kao, S. C., Wu, C., & Su, P. C. (2011). Which mode is better for knowledge creation? *Management Decision.*

Solomon, J. (2020). *Corporate governance and accountability*. John Wiley & Sons.

Hughes, S., Giest, S., & Tozer, L. (2020). Accountability and data-driven urban climate governance. *Nature Climate Change, 10*(12), 1085-1090.

Gorman, L., & Ward, A.-M. (2020). Accountability. *Encyclopedia of Sustainable Management.*

Tetlock, P. E. (1985). Accountability: A social check on the fundamental attribution error. *Social Psychology Quarterly, 227-236.

Mac Donald, K., Rezania, D., & Baker, R. (2020). A grounded theory examination of project managers' accountability. *International Journal of Project Management, 38*(1), 27-35.

Oliveira, A. S., de Barros, M. D., Pereira, F. de Carvalho, Gomes, C. F. S., & da Costa, H. G. (2018). Prospective scenarios: A literature review on the Scopus database. *Futures, 100,* 20-33.