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EDITORIAL SCOPE – BUILDING AND CONSTRUCTION MANAGEMENT EDITION

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Abstract — The second editorial scope of the Journal of Civil Engineering, Science, and Technology (JCEST) emphasizes one of the main disciplines of civil engineering, namely building and construction management. The continued development of management theories has continuously influenced construction project delivery practices. The knowledge gained from R&D could enhance construction management practices towards excellent performance in the delivery of built-environment projects. This brief editorial piece highlights the themes of building and construction management in the last 10 years by gathering information from the freely-accessible Scopus database and the most published area of JCEST from the perspective of common keywords found in published papers. Based on the civil, building and construction management research field, the top 10-ranked keywords were found based on Scopus database and "Construction" is the top keyword found based on the articles on building and construction management published in JCEST. The aim of this exercise is to provide a brief guide to researchers to explore the state-of-the-art knowledge in the area of building and construction management in the construction industry.

***Keywords*:** Building, construction management, JCEST, civil engineering, Scopus

1.0 INTRODUCTION

The relationship between building and construction has always defined the field of design and management. "Building" is defined as a structure such as a house, school, or factory that has a roof and walls as well as the process of creating or developing something [1, 2]. Meanwhile, based on Oxford and Cambridge dictionaries, "construction" is the process or method of building or making something, especially roads, buildings, and bridges, as well as the way that something has been built or made [3, 4]. By looking at their respective definitions, construction is a more specific term that refers to the activities that result in the making of a building as the final product. A building is an actual structure that emerges after the process of construction is over. In civil engineering, both of these building and construction make up a series of research fields that encounter structure and material, building services, built environment as well as project and construction management. This editorial piece highlights the themes of building and construction management in the last 10 years by exploring the statistics that tell us the "popular" era and its quality of publication represented with metrics.

2.0 GLOBAL PUBLICATION STATISTIC

As presented by the Scopus database based on the keywords search of "civil" AND "building" OR "construction management", the overall range of published documents is from 2 to 414 documents per year. Figure 1 shows published documents by year (up to 2021) extracted from the Scopus database [5]. In the recent 10 years, the number of relevant documents curated on the platform has decreased from the year 2012 to 2016 and started to increase until 2020. The published document was at its peak in 2011, consisting of 414 documents. The breakdown of disciplines related to civil, building and construction management shows that engineering is the most dominant field, accounting for almost half of the contribution, as disclosed in Figure 2. The second and third main contributors were those from business, management, and accounting as well as computer science, respectively. Others covered a combination of various other lesser contributing areas, such as social science, environmental science, earth and planetary sciences, material science, and energy.

Based on the civil, building and construction management research field, the top 10-ranked keywords in descending order of document contribution number are civil engineering, project management, construction industry, risk management, construction, sustainable development, management, construction projects, construction

management, and information management [5]. Of these and by limiting to engineering articles, planning in management [6] is the leading article as the top-most cited paper, with 427 citations at the time of writing, followed by construction monitoring [7], construction site safety [8], project delivery [9], and lean project management [10] in rounding-up 5 top-most cited papers.

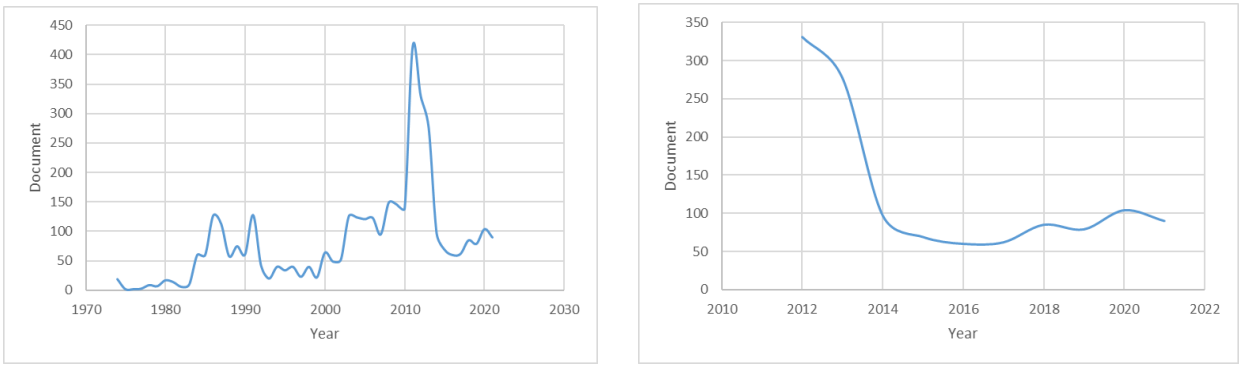

Figure 1 Number of published documents by year: (a) Overall, and (b) recent 10 years (keyword: civil AND building OR construction).

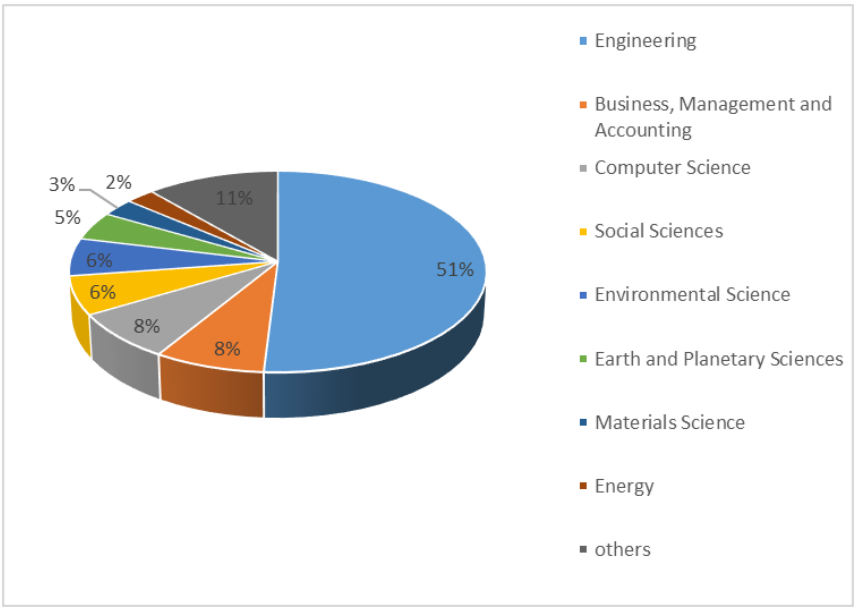

Figure 2 Document percentage by topic (keyword: civil AND building OR construction management) [5]

3.0 JCEST PUBLICATION TREND

Researchers use most of their time searching for articles by using keywords. Keywords play an important role by instructing search engines to find information that is being looked for. Placing a correct keyword may increase the visibility of the articles and improve citation. In this editorial note, the main contributing keywords in the building and construction management areas as observed from the trend of the JCEST publication has been highlighted, and no detailed analysis or simulation was carried out [11]. Looking at the key elements of the articles on building and construction management published in JCEST, some common keywords were found, such as construction, projects, factors, management, study, water, temperature, cost, industry, and performance as presented in Figure 3 [12]. The popularity of the keywords used in the field of building and construction management is reflected in their font size in the keyword cloud chart below. Next, the normalised influence represents the appearance of a particular keyword divided by the mostly found in the titles, abstracts, and keywords; “construction” being the most popular word in the building and construction management papers of JCEST [11] as shown in Figure 4. These are the terms widely available in the vast majority of JCEST papers from the last 5 years.

Figure 3 JCEST keyword cloud

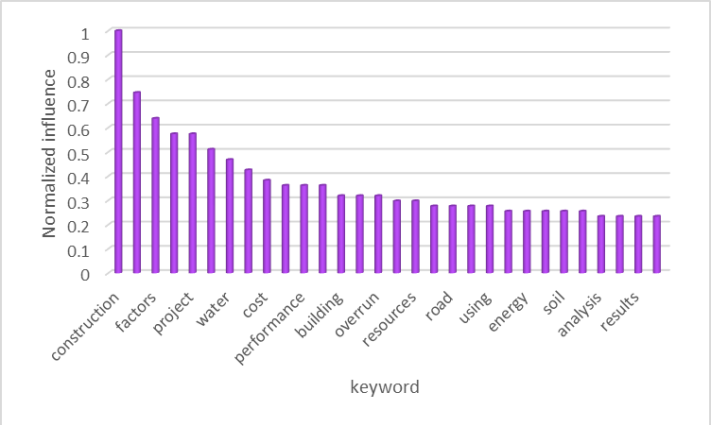

Figure 4 JCEST keyword influence

Although there are not many papers published in the field of building and construction management in JCEST compared to the field of structure and material [11], the potential alteration in line with technological advances are paving the way for digital transformation in the construction industry. These may create more room for research activity as well as search for potential journals to publish their findings. Staying on top of the trends in the construction industry helps you stay ahead of the curve and allows you to prepare for the future. The construction industry is leveraging on technology to make construction management and site operations more efficient and sustainable. To fit to this trend, building information modeling (BIM), construction robotics, and the use of advanced building materials emerged in the construction industry. Furthermore, the COVID-19 pandemic created the need for newer construction methods that adhere to worker safety and regulations. Therefore, startups related to the development of prefabrication, BIM, cloud and real-time collaboration, construction robotics, and automation in construction are essential to fit into the current trend of the construction industry. Besides, innovative ways of using 3D printing and 3D scanning and photogrammetry have significantly increased accuracy in data capture, especially in topography. Therefore, these are the evolving areas of emphasis to explore in the probable future in the civil engineering building and construction management discipline.

4.0 CONCLUSION

The current JCEST editorial note had made an initiative to look into the themes of building and construction management in civil engineering research. Data were obtained from the Scopus database and the JCEST publication trend. The popular keywords in both sources were identified and presented, which showed the dominance of these works in the building and construction management field. This paper would allow researchers to gain more insight into the state-of-the-art knowledge in the area of building and construction management in the construction industry.

Conflicts of Interest

The author declares that there are no conflicts of interest regarding the publication of this paper.

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[3] Oxford Advanced Learners Dictionary. (2022). Definition of construction noun. Retrieved July 6, 2022, from https://www.oxfordlearnersdictionaries.com/definition/english/construction#:~:text=%5Buncountable%5D the process or method,%2C buildings%2C bridges%2C etc.

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