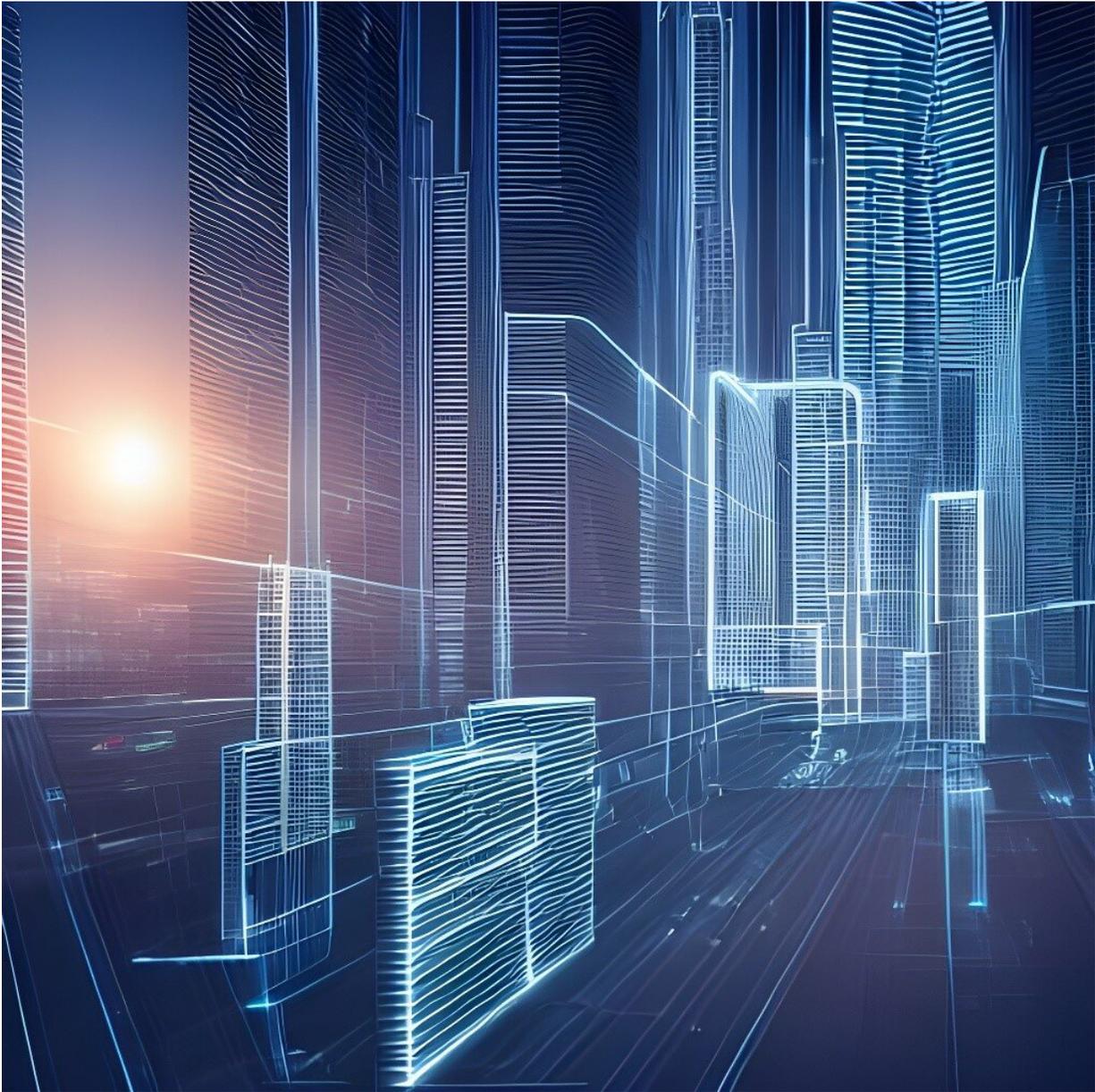# Digital transformation in construction industry requires more support, study shows

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Digital transformation in construction industry requires more support, study shows. Credit: XJTLU

In recent years, the engineering and construction industries have been exploring the use of digital technologies to boost productivity and improve safety, quality, and sustainability. However, digital transformation in this industry has been slow compared to other sectors due to certain obstacles.

In a paper recently published in the journal *Engineering, Construction, and Architectural Management*, researchers from Xi'an Jiaotong-Liverpool University and the University of Lincoln identify, classify and rank the main obstacles preventing digital transformation in this sector.

The researchers identified barriers through a systematic literature review and expert validation, then surveyed 192 construction professionals in China on the impact of the obstacles. They found that the three main problems are a lack of laws and regulations, a lack of support and leadership, and a lack of resources and professionals.

Changing legislation

The lack of laws and regulations is the most significant among the barriers identified, according to Dr. Fangyu Guo, assistant professor at XJTLU's Department of Civil Engineering and corresponding author of the paper.

"The lack of laws and regulations has a negative effect on digital transformation because construction companies need governmental regulations as guidelines to determine their strategies and adapt their organizational structure.

"Well-established standards and regulations are critical for directing an effective digital transformation and motivating stakeholders to invest more in various digital technologies and tools," Guo says.

Leadership and resources

A lack of support and leadership also negatively influences digital transformation. Most employees may be unfamiliar with the new technologies, and insufficient support from senior management will reduce their willingness to adapt to the change.

"It is important for senior management in construction firms to give ongoing support and motivation to employees during the implementation of digital transformation," says Dr. Guo.

The lack of resources and professionals is another obstacle. There is currently a large digital skills gap in the industry, so developing the next generation of digital skills and relevant talents is crucial to digital transformation.

The researchers suggest firms must develop strategic plans and training programs to obtain potential talents who can use digital technologies and possess long-term business intelligence.

The study offers insights for governments and construction companies to improve their understanding of these barriers and their impacts. The findings will help to establish policies that can use digital transformation to enhance construction project management.

The research team consists of Kaiyang Wang, Dr. Fangyu Guo, and Dr. Cheng Zhang from XJTLU, and Professor Dirk Schaefer from the University of Lincoln.

Provided by Xi'an jiaotong-Liverpool University

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