Research reveals that blockchain technology is probably unnecessary in the majority of cases, despite its popularity

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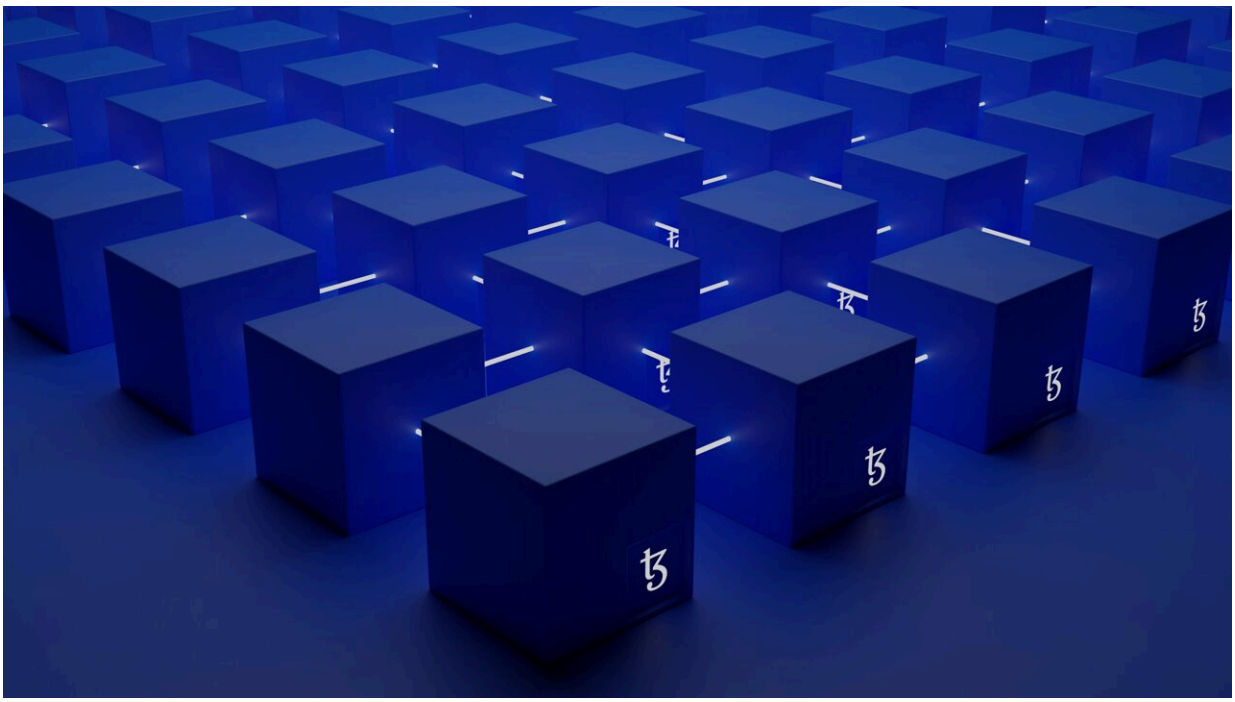

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In recent years blockchain technology has been making headlines and boomed in popularity, thanks partly to its use in the cryptocurrency Bitcoin. But, new research from the University of Birmingham published in *Telematics and Informatics Reports* has found that in most cases, the

use of blockchain may not be needed.

When someone wants to explore whether they should use blockchain, they may turn to blockchain decision schemes (BDSs) to help them decide whether to use it or not.

Dr. Joseph Preece, a Computer Scientist and Research Fellow at the University of Birmingham who led the research, said, "Blockchain is a powerful data structure that provides a traceable, tamper-proof record of transactions. Using one can reduce the need for centralized authorities, and as such, researchers, entrepreneurs, and businesses have been exploring ways to use the technology for their specific needs.

"For many, FC-BDSs can help in the decision-making process. However, our research has found that there are an overwhelming number of FC-BDSs to choose from, of which many suffer from inherent biases one way or the other. Overall, these schemes tend to suggest avoiding blockchain, meaning that people are deciding to use blockchain when a different solution could be just as good, or even better."

The researchers reviewed and conducted an in-depth analysis of FC-BDSs. They found that the average model used eight questions and four outcomes to help users decide whether to use blockchain or not. Most of the questions were focused on data and participation attributes, rather than security and performance, which do not give a holistic picture and may lead people to make an uninformed decision.

The study revealed that despite the vast number of different FC-BDSs available, some of the schemes had similarities of over 90%. The researchers argue that this could be because FC-BDS publication is not a formalized process, despite the significant role it could play in an important decision.

Dr. Preece explains, "If you want to create and publish an FC-BDS then you do not necessarily need to go through peer review. It is also incredibly easy to get inspiration from, or copy, earlier models to build on. This means that some of these schemes end up with a lot of similarities, with only tiny changes to make them fit a specific need. Again, this flaw in the scheme could mean that people are steered in the wrong direction."

The next step in the research is to compare the performance of FC-BDSs with the other forms of blockchain decision schemes. The researchers also want to create their own FC-BDS, taking into account the findings of the study, and look to promote standardizing the production and publication of these tools.

Dr. Preece concludes, "Blockchain is a very powerful piece of technology and can be incredibly useful. But currently, the tools used to help make decisions about its use cannot be trusted to be as accurate as the advice of a domain expert."

"Without addressing the biases in FC-BDSs and tightening up the production of these schemes, we will have people and businesses deciding to use blockchain, when that may not be the right tool for them. These could be costly and time-consuming mistakes, and in some cases, blockchain implementation may end up doing more harm than good."

More information: J.D. Preece et al, To blockchain or not to blockchain, these are the questions: A structured analysis of blockchain decision schemes, *Telematics and Informatics Reports* (2024). DOI: 10.1016/j.teler.2024.100115

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