



# **Digital Technology in Construction and Real Estate Projects**

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# Background



Digitalization has been an important aspect worldwide, and the world is transforming accordingly.

Real estate projects are also embracing digital transformation because the data analytics it enables allows them to better understand and predict consumer behaviour

The industry will gain from digitization by getting cost-efficiency, a quicker review process, and consistency.

Digital revolution in the real estate business has moved from the status quo to the necessity.

- Real estate industry is slow-moving and paper-based with limited technology access, resulting in inefficiencies.
- Technological advancements and changing consumer behavior have increased the demand for digital solutions in real estate.
- Digitalization can offer benefits such as faster transactions, increased transparency, and better customer experiences.
- The COVID-19 pandemic has accelerated the need for digital tools and platforms in the real estate industry.
- The industry needs to embrace digitalization to improve efficiency, streamline processes, and meet evolving customer needs.

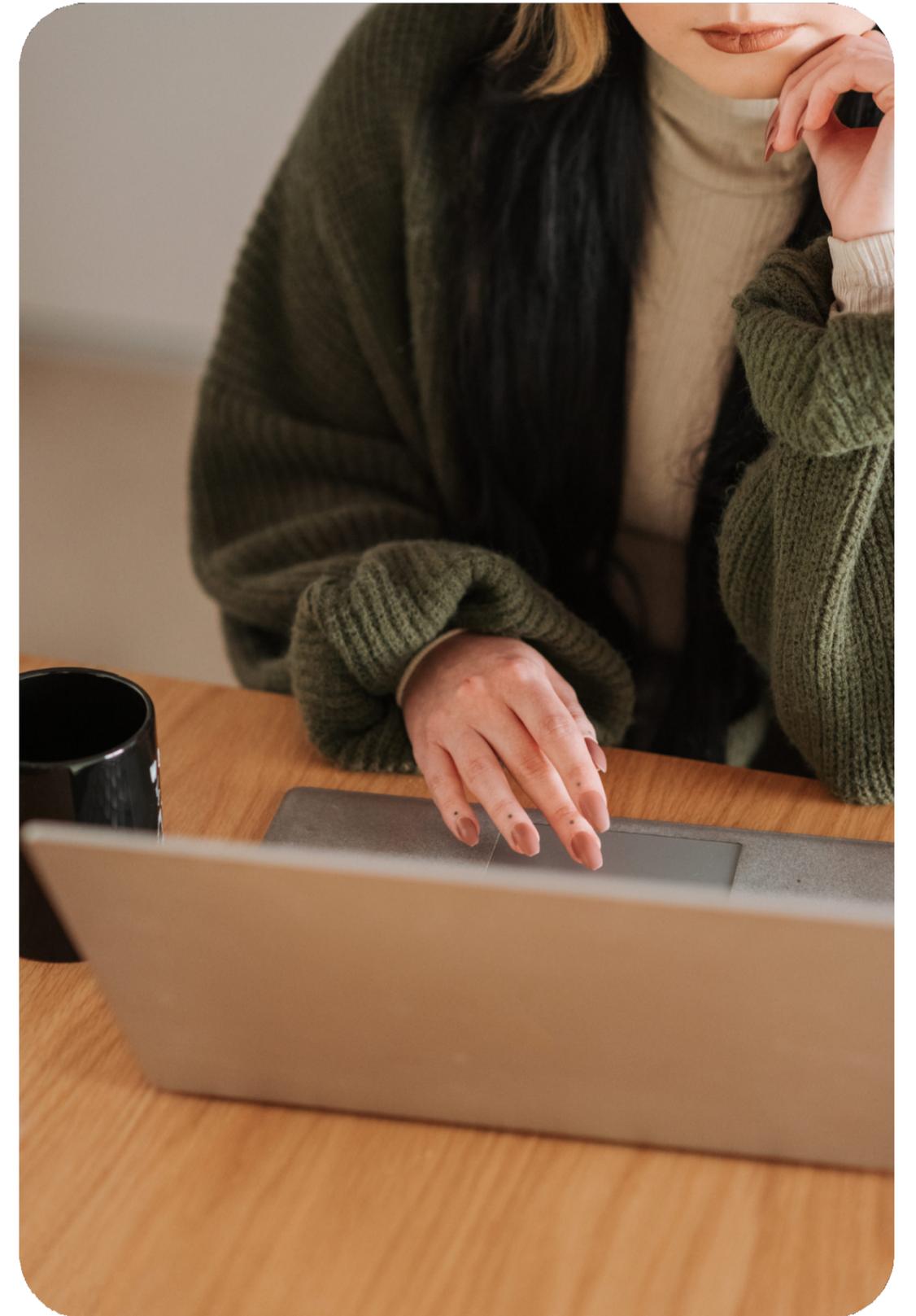


## **Aim of the research**

To develop an understanding of digitalization in construction and real estate projects and processes going forward in future.

## **Scope of the Research**

Focusses on Valuations and Smart Contracts





# LITERATURE REVIEW

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The valuation system is a regular process which is generalized by all the valuers but later the development of the automated valuation model has taken over the platform and software-based pricing model used in the real estate market to value properties.

- The automated valuation consists of many drawbacks as it is not yet adopted by the industry of real estate sector of India.
- Different approaches were adopted for the success of the valuation digitalisation process but due to lack of acceptance of the people, the process was in its gradual growth stage.
- The big companies like JLL, C&W, and Knight Frank are accepting these form of valuation method which might later get accepted by the whole industry
- Alternative process of valuation is being initiated by JLL which is not as accurate as manual process but is being accepted mainly for the multi housing rental properties.

## Valuation of Projects

- Manual Valuation  
to
- Automated Valuation

# Smart Contracts

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- Smart contracts were pioneered by Ethereum blockchain technology and have significant impacts on trends and technology.
  - However, there are security and legal issues with smart contract technology that are not yet regulated by statutory bodies.
  - Smart contracts have potential uses in real estate, such as for land transactions and rental agreements, but are not yet widely used in India.
  - Smart contracts can address the problem of multiple property sales and can also facilitate rental agreements.
  - Challenges facing the use of smart contracts in real estate include scalability, performance issues, and lack of studies on criminal activities.
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# **RESEARCH METHODOLOGY**

**Valuation**

**Interview Questions  
and Survey**

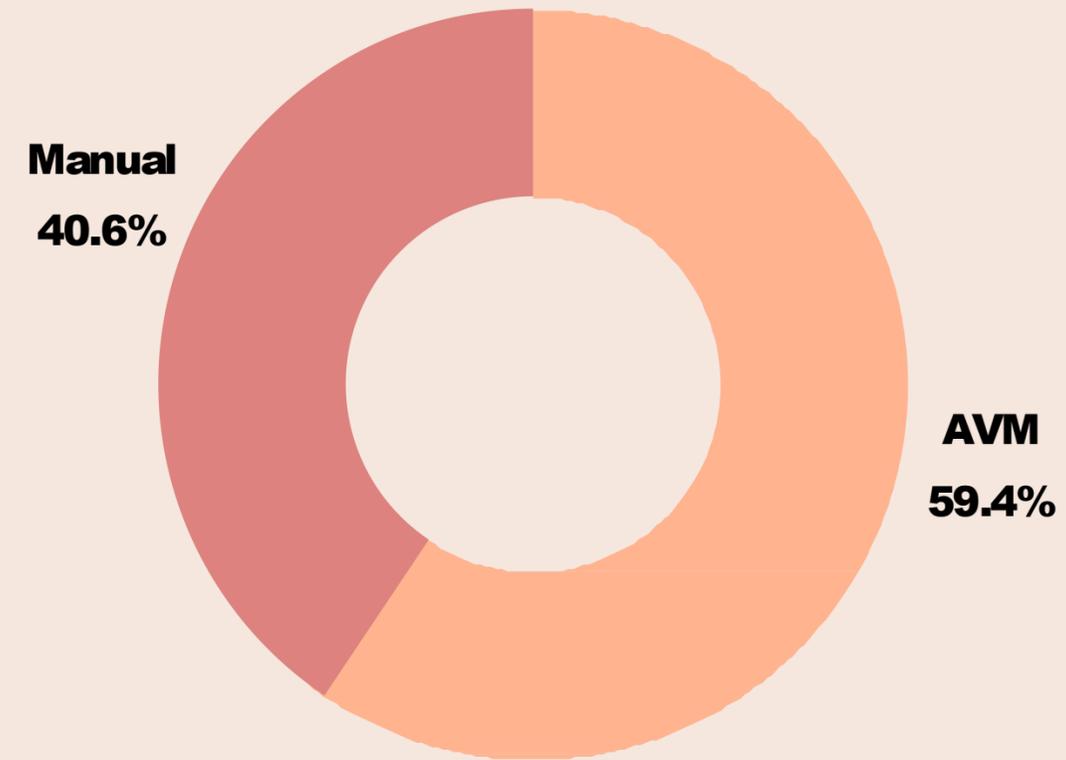
**Smart Contract  
Systematic Mapping**



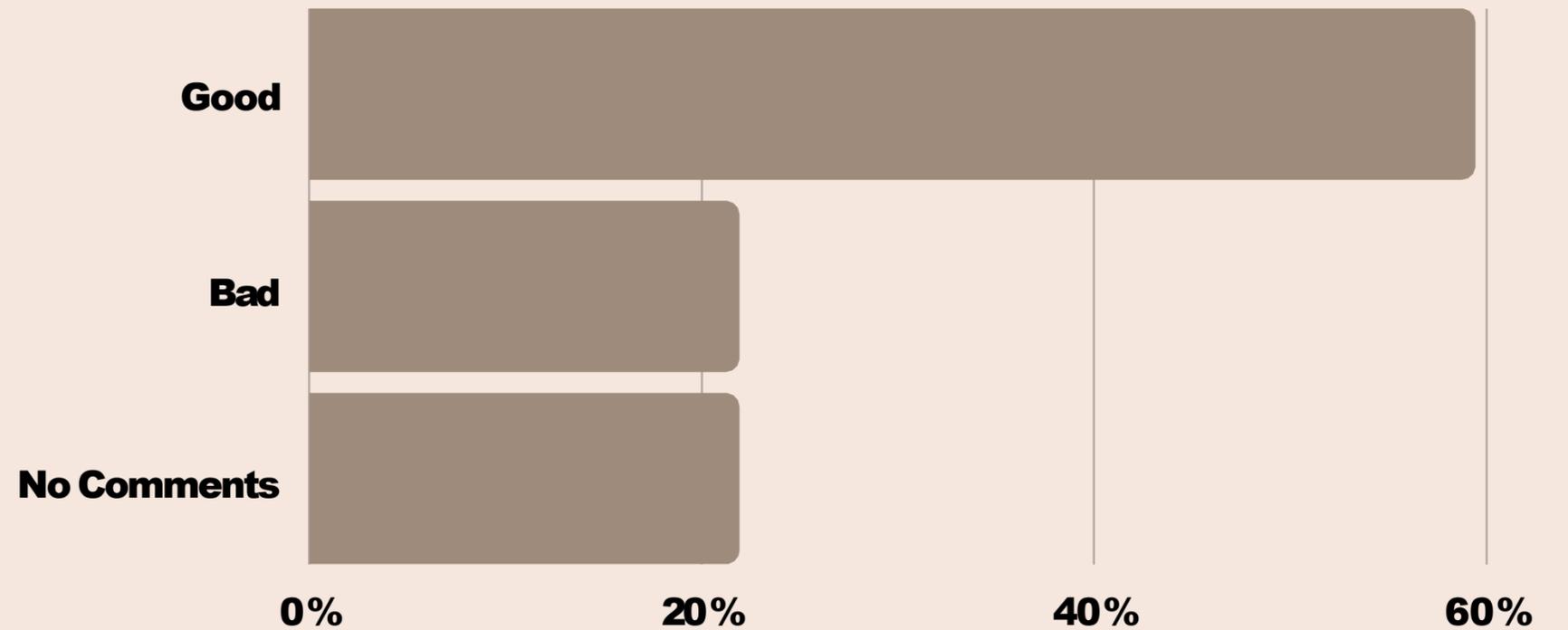
# Valuation – Survey Results



Automated Valuation Method (AVM) is a better method for property valuation or a manual method?



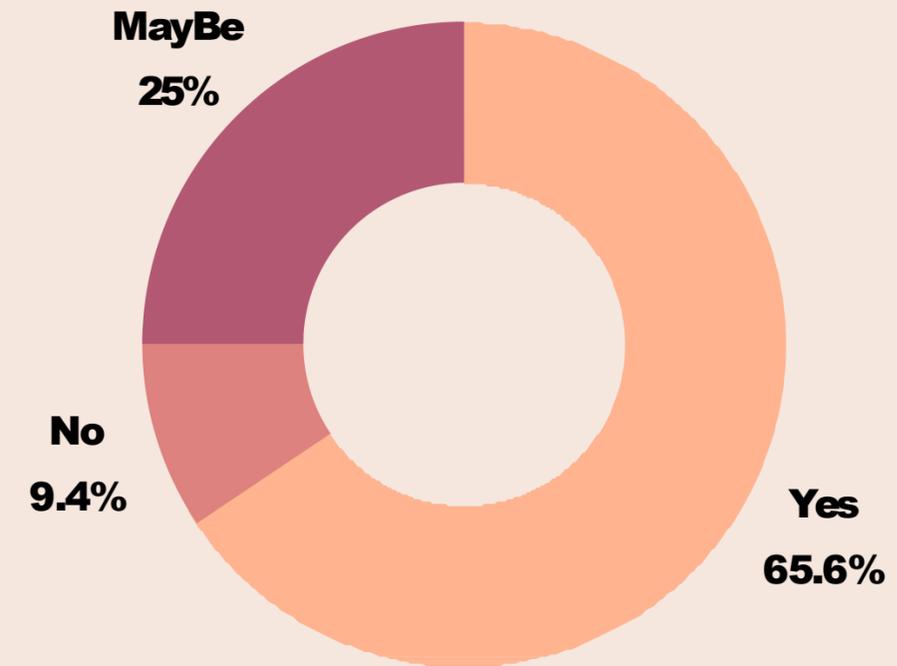
Impact of AVM on the real estate industry?



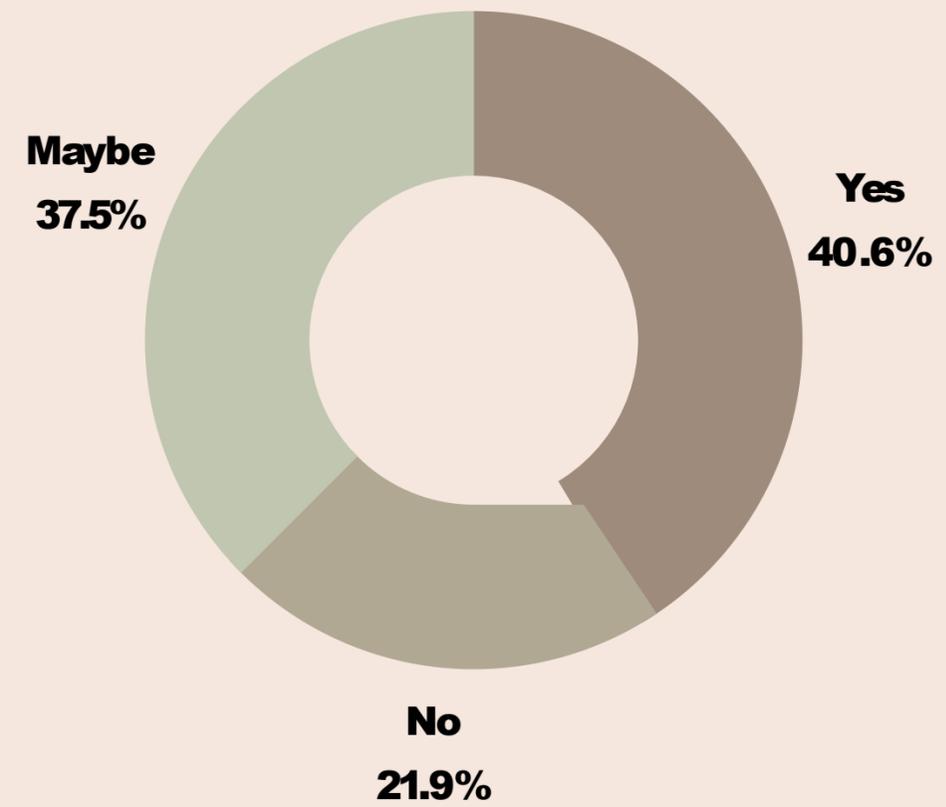
# Valuation – Survey Results



Does your work demands you to learn a new technology?



Should AVM be used in a larger scale in all valuation firms?



# Valuation– Key findings



- According to the survey it is found that, 59.4% Valuers feel AVM is not a convenient method of approach.
- Valuers have understanding about the AVM approach but they also know that this process lacks the accuracy factor.
- Valuers are willing to learn a new technology for the career beneficial purpose.
- AVM is an effective process but cannot replace human intervention in the whole process.
- 40.6% feel larger companies should adopt AVM and 37.5% feel there may be a need for this or may not be a need of this system yet.

# SMART CONTRACTS: Systematic Lit Mapping



The aim is to analyze and discuss existing studies, collect their findings and summarize the empirical evidence regarding the applications of blockchain and smart contracts, to identify the importance of blockchain-based smart contracts.

The Literature review relies on an electronic advanced search conducted in 2021 using IEEE, Elsevier, Emerald, Science Direct, Springer Link, and the available books related to the study.

A study was included in this review if it met the following inclusion criteria: (1) full-text research or review paper published in English between 2017 and 2021, (2) The paper should study, the effect of real estate registration using blockchain technology

# Literature Review

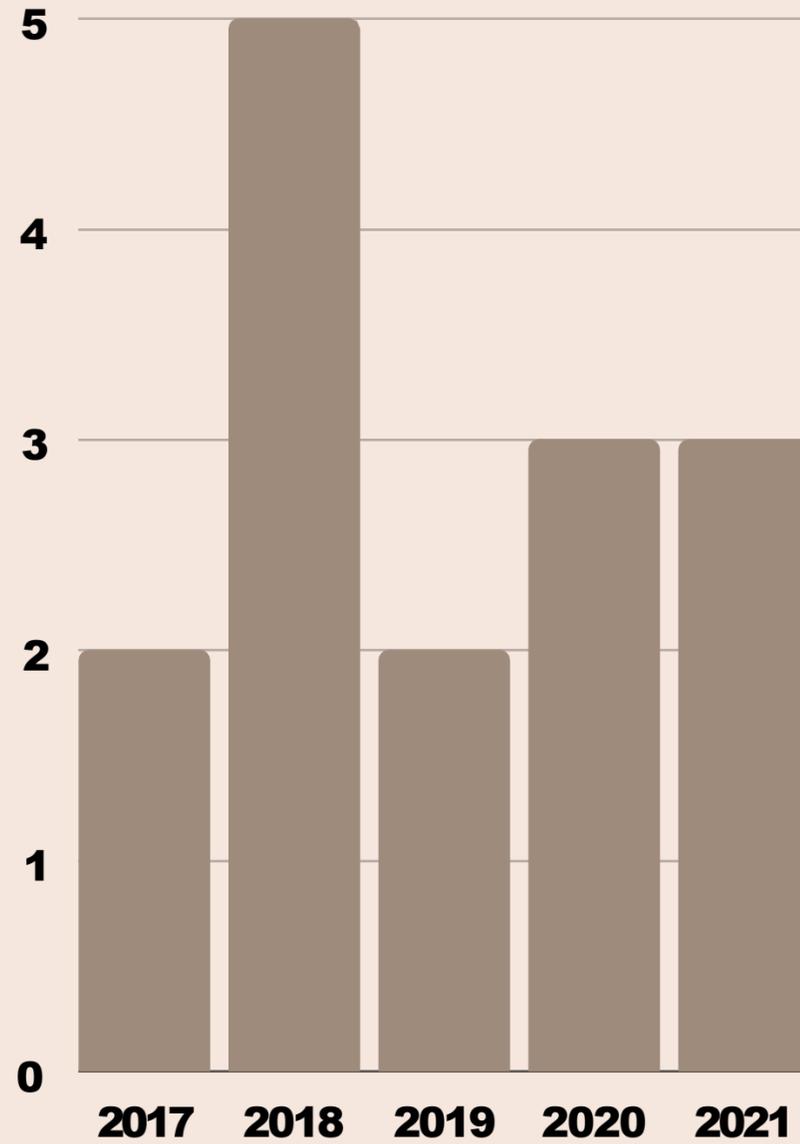


Figure - 1: Timeline of research papers

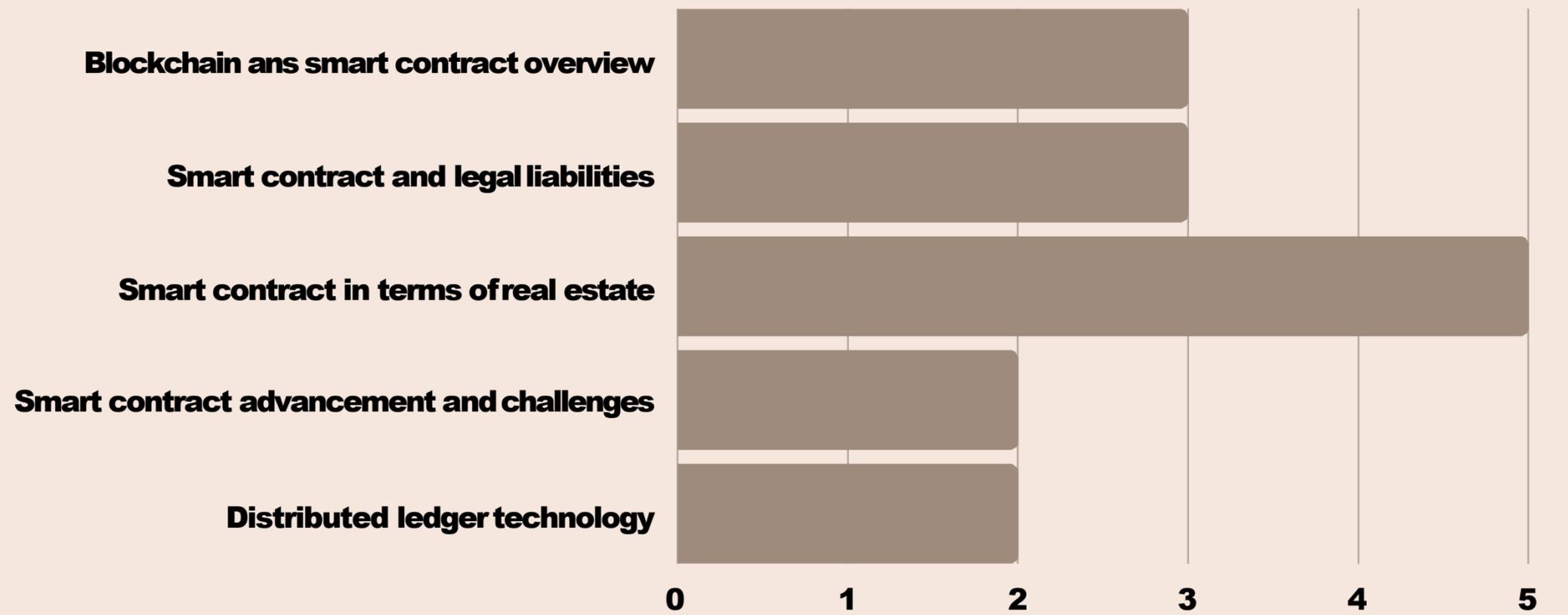
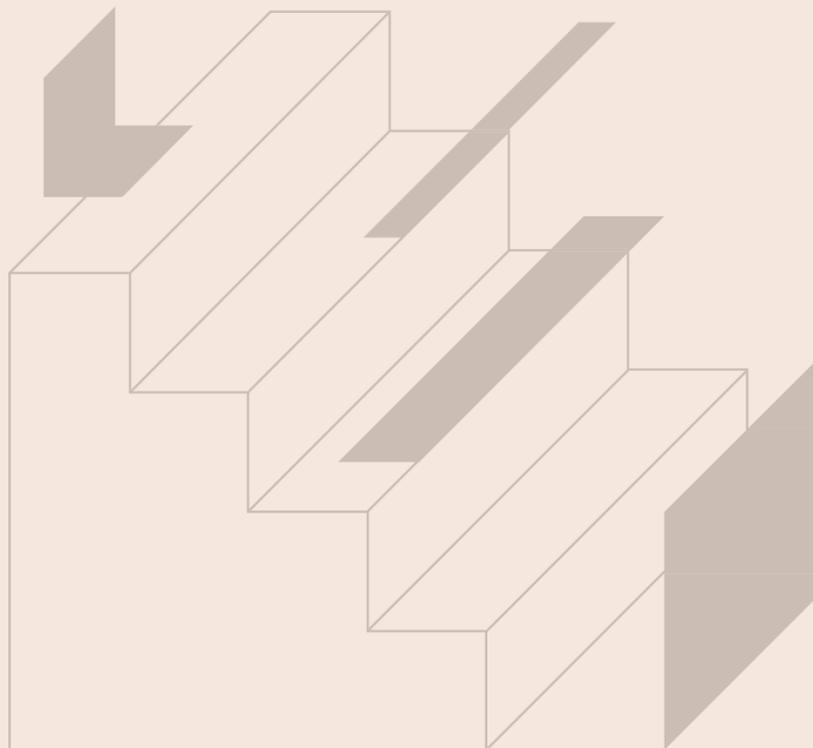


Figure - 2: Category of the review

# Key Findings

- Smart contracts are dependent on technological awareness and advancements in India and could lead to mass layoffs if people are unwilling to adapt.
- More IT involvement would be required for smart contracts compared to legal or technical personnel.
- Some countries abroad are already using smart contracts for land transactions, but India is more inclined towards distributed ledger technology.
- While there are no regulations for smart contracts, they are accepted as legal documents if signed by a legal authority during the transaction.
- However, there may be possible disadvantages due to the lack of studies on criminal attacks in the blockchain field.

# Overall Conclusions



In conclusion, digitalization has the potential to revolutionize the real estate industry.

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While technology can enhance efficiency, transparency, and customer experience, it should be seen as a complement to human expertise and not a replacement.

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The role of consultants and the importance of Change Management cannot be overstated in the successful implementation of digitalization projects.

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Furthermore, the adoption of blockchain technology can significantly improve the security and transparency of the asset management process.

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By doing so, the industry can unlock the full potential of digitalization and provide better services to customers while increasing efficiency and transparency.

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**Thank you!**

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