



BLOCKCHAIN: Do people really need to understand it in order to use it?

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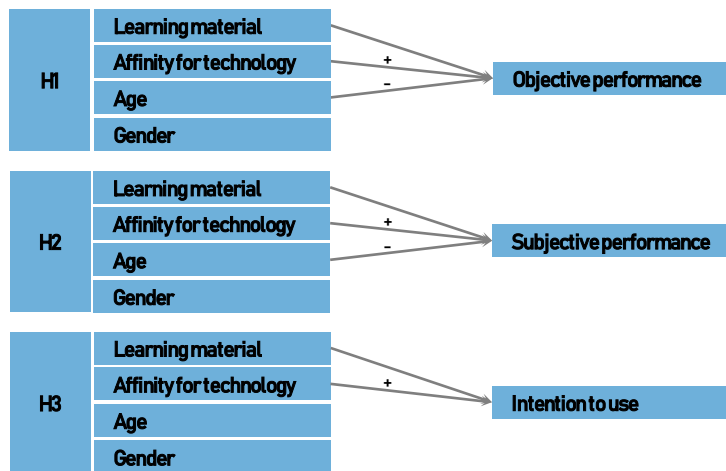
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BACKGROUND

Due to its characteristics, blockchain offers **high potential** in numerous applications. However, according to previous studies, the **main adoption barrier is lack of understanding in the general population** (Sadhya & Sadhya, 2018). Therefore, we assume that learning blockchain content will lead to an increased intention to use it. **Learning** can be **enhanced** through various techniques, such as chunking and cueing of important content or asking guiding questions (Brame, 2016). Therefore, the use of these techniques will lead to higher objective and subjective learning performance. In line with Halama et al. (2021), younger age and higher affinity for technology, but not gender of subjects, will increase their objective and subjective performances.

In summary, we formulated the following hypotheses (H1-3):



METHOD

DESIGN

- online quasi-experiment; between-subjects design
- IV:** Learning material (with vs. without chunking, cueing, & guiding questions); affinity for technology, gender, age
- DV:** objective performance in a knowledge test, subjectively rated performance, intention to use

SAMPLE

- $N = 85$ blockchain novices
- Gender: $n = 54$ female, $n = 31$ male
- Age: $M = 35.39$ years, $SD = 17.87$ years ($min = 18$, $max = 86$)
- Education: $n = 2$ Certificate of Secondary Education, $n = 13$ GCSE, $n = 37$ A-Level, $n = 33$ university degree

PROCEDURE

- Informed consent
- Demographics: gender, age
- Subjective performance (pre), affinity for technology (ATI Scale, Franke et al., 2018)
- IV: Learning material (randomised order)
- DV: Intention to use, subjective performance (post), objective performance (9 single choice items in a self-constructed knowledge test; previous evaluated by experts)

LEARNING MATERIAL

WITH chunking, cueing, and guiding questions (excerpt)

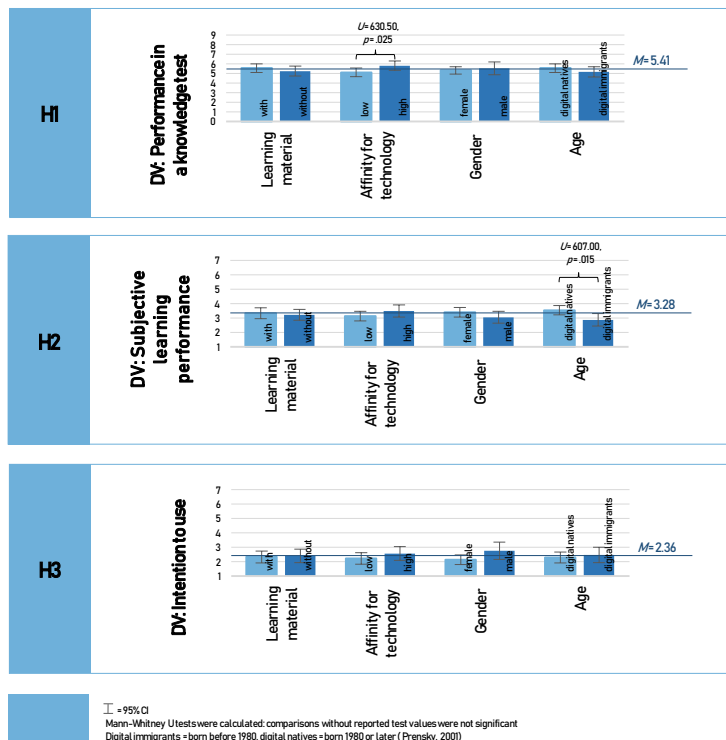
What is blockchain?

A blockchain is a large database in which data is combined and stored in a **block**. Each block is given an individual number and letter code (a so-called "hash"). Several blocks are linked to each other via these codes and thus form a long chain (hence the name blockchain = chain of blocks) ...

WITHOUT chunking, cueing, and guiding questions (excerpt)

A blockchain is a large database in which data is combined and stored in a block. Each block is given an individual number and letter code (a so-called "hash"). Several blocks are linked to each other via these codes and thus form a long chain (hence the name blockchain = chain of blocks) ...

RESULTS



DISCUSSION

- H1**
 - Manipulation of Learning material was not **successful**
 - Higher affinity for technology favours the learning of blockchain content; other DVs had no effect on the performance → Partially reject H1
 - Novices are capable of understanding blockchain characteristics
 - A lacking objective knowledge can be an adoption barrier, but seems to be less important than assumed.
- H2**
 - Only difference in subjective performance for age → Partially reject H2
 - Participants are able to assess their objective performance
- H3**
 - Intention to use does not differ for any of the IVs → Partially reject H3
 - Intention to use is **very low overall**
 - Although the objective understanding is good, participants do not want to deal with blockchain in the future.
 - This raises the question of whether the understanding of blockchain can be neglected against other aspects such as applications' needs or user experience.
- Limitations:** Sample not representative; learning materials "only" texts