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Beyond Cryptocurrency: Assessing Blockchain Literacy and Business-Application Awareness among Commerce Students

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ABSTRACT :

Blockchain education is frequently introduced through its association with Bitcoin, yet the technology has potential relevance to a much broader set of business functions. For commerce students, an understanding of distributed records, traceability, security and digitally enabled transaction processes may become increasingly relevant to accounting, auditing, banking and finance. This study examines the extent to which commerce students move beyond the cryptocurrency association and recognise blockchain as a wider business technology. Primary data were collected from 130 respondents through a structured online questionnaire. The analysis combines percentage measures, weighted mean scores, chi-square tests and an independent-samples t-test. The results show that 64.6% of respondents had heard of blockchain, whereas only 43.8% clearly reported awareness of applications beyond Bitcoin. Bitcoin and cryptocurrency remained the most common association with blockchain. Perceptions of blockchain were moderately favourable, with an overall weighted mean of 3.43; security received the highest mean score of 3.58. Significant associations were observed between general blockchain awareness and year of study, association with Bitcoin/other application areas, and awareness of applications beyond Bitcoin. Gender was not significantly associated with awareness, and the difference in overall perception between aware and non-aware respondents was not statistically significant. The findings suggest a gap between basic recognition of blockchain and understanding of its wider business applications. The study highlights the need for curriculum-linked exposure, practical demonstrations, case-based learning and reliable digital learning resources.

Keywords: Blockchain literacy; distributed ledger technology; commerce education; Bitcoin; accounting; auditing; banking; finance

1. Introduction

Blockchain has moved from being primarily discussed as the technological foundation associated with Bitcoin to becoming a broader subject of interest in business and education. At its core, blockchain can be understood as a distributed digital record in which transactions or other records are stored sequentially and linked through cryptographic mechanisms. Its distributed structure, traceability and resistance to unauthorised alteration have generated interest in settings where the integrity and visibility of records are important.

For commerce education, the distinction between blockchain and cryptocurrency is particularly important. Students may recognise Bitcoin without understanding that blockchain represents a wider technological architecture capable of supporting applications in accounting, auditing, banking, finance, supply-chain processes, smart contracts and digital identity. Consequently, measuring only whether students have heard the word "blockchain" may overstate the depth of their understanding.

The present study therefore approaches blockchain awareness from two levels: basic recognition of the technology and awareness of applications beyond Bitcoin. It also examines how students perceive potential contributions to transparency, accuracy, security, fraud reduction, auditing, banking and finance, and future business relevance. This approach provides a more education-oriented view of blockchain literacy among commerce learners.

2. Review of Literature

Prior studies have examined blockchain awareness, adoption intention, perceptions and educational applications. The literature cited for the present study indicates that blockchain is increasingly being discussed in accounting education, higher education and business settings. Research has also

highlighted the role of awareness, perceived usefulness, financial literacy, technological familiarity and institutional support in shaping understanding or adoption.

Studies of students and educational users suggest that familiarity with blockchain is uneven. Some learners possess a general awareness of the technology but have limited knowledge of how distributed ledger systems can be applied outside cryptocurrency. This distinction is relevant to commerce education because accounting and finance students may encounter blockchain-related concepts through audit trails, transaction verification, digital records and financial services rather than through cryptocurrency alone.

The literature also points to the need for practical exposure. Classroom explanations can establish the conceptual foundation, while demonstrations, case studies and application-oriented activities may help students connect blockchain concepts with actual business processes. The present study builds on this educational perspective by examining the extent to which students recognise blockchain applications beyond Bitcoin and by relating awareness to selected academic and demographic variables.

3. Research Gap

Existing work reflects substantial interest in blockchain as a technological innovation and, in several studies, as a component of cryptocurrency adoption. However, the educational question of whether commerce students understand blockchain as a broader business technology remains comparatively less visible. In particular, there is scope to distinguish basic awareness from awareness of applications connected with accounting, auditing, banking and finance.

The present investigation addresses this gap by examining both the breadth of blockchain awareness and students' perceptions of its relevance to commerce-related domains. The study also tests whether awareness varies with year of study and other selected characteristics.

4. Objectives of the Study

To measure the level of blockchain awareness among commerce students.

To identify the principal channels through which students obtain information about blockchain.

To determine the extent to which students recognise blockchain applications beyond Bitcoin and cryptocurrency.

To examine students' perceptions of blockchain's usefulness in accounting, auditing, banking and finance.

To test the association between blockchain awareness and selected demographic and academic characteristics.

To examine whether awareness status is associated with differences in overall perception of blockchain's future relevance.

5. Scope of the Study

The study is confined to the commerce students represented in the sample of 130 respondents. It considers awareness, information sources, the Bitcoin association, recognition of wider blockchain applications, self-rated knowledge and perceptions of selected business uses. The results describe the respondents included in the study and should not be treated as representative of all commerce students in India.

6. Research Methodology

6.1 Research Design and Data Sources

A descriptive research design was adopted. Primary data were collected using a structured questionnaire administered through Google Forms. Secondary material for conceptual background and literature review was drawn from research articles, academic journals, reports and relevant educational sources.

6.2 Sample and Sampling

The final sample consisted of 130 respondents. Convenience sampling was used because participation depended on respondents' accessibility and willingness to provide information.

6.3 Analytical Techniques

- Percentage analysis was used to describe respondent characteristics and awareness responses.
- Weighted mean analysis was used for seven perception dimensions measured on a five-point Likert scale.

- Chi-square tests were applied to examine selected associations involving blockchain awareness.
- An independent-samples t-test was used to compare overall perception scores between respondents who reported awareness and those who did not.

7. Results and Discussion

7.1 Respondent Profile

Age group	Respondents	Percentage
16–17	11	8.5%
18–20	86	66.1%
21–23	21	16.2%
24 and above	12	9.2%
Total	130	100%

The respondent profile is concentrated in the 18–20 age group, which accounts for 66.1% of the sample. This reflects the predominantly undergraduate character of the respondent pool.

Gender	Respondents	Percentage
Female	94	72.3%
Male	35	26.9%
Others	1	0.8%
Total	130	100%

Female respondents constitute 72.3% of the sample, while male respondents constitute 26.9%.

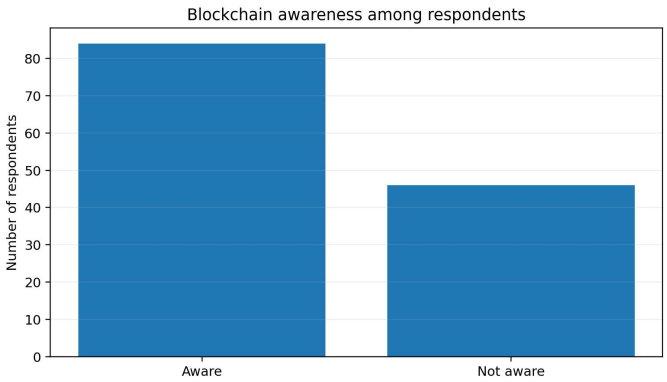
Programme	Respondents	Percentage
B.Com – Accounting and Finance	72	55.4%
B.Com – Other Specialisation	28	21.5%
Other Degree	23	17.7%
M.Com	7	5.4%
Total	130	100%

B.Com Accounting and Finance students form the largest programme group, accounting for 55.4% of respondents.

Year of study	Respondents	Percentage
I Year	15	11.5%
II Year	29	22.3%
III Year	60	46.2%
Postgraduate	26	20.0%
Total	130	100%

Third-year students constitute 46.2% of the sample. Postgraduate respondents account for one-fifth of the observations.

7.2 General Awareness and Information Sources



Awareness of blockchain	Respondents	Percentage

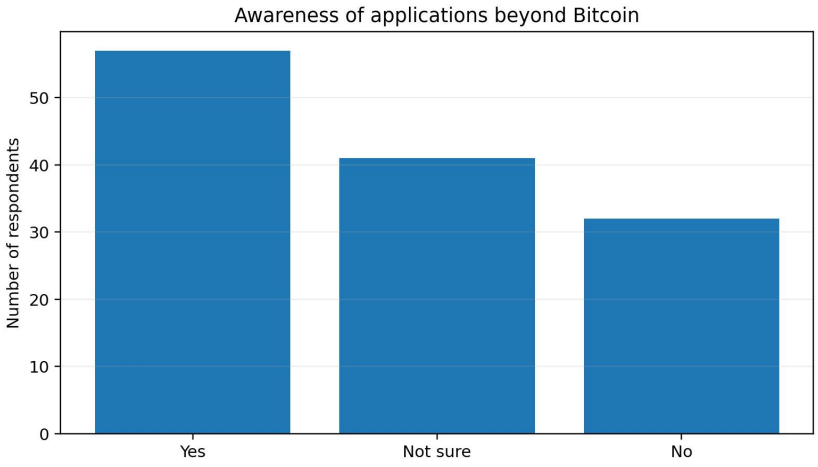
Yes	84	64.6%
No	46	35.4%
Total	130	100%

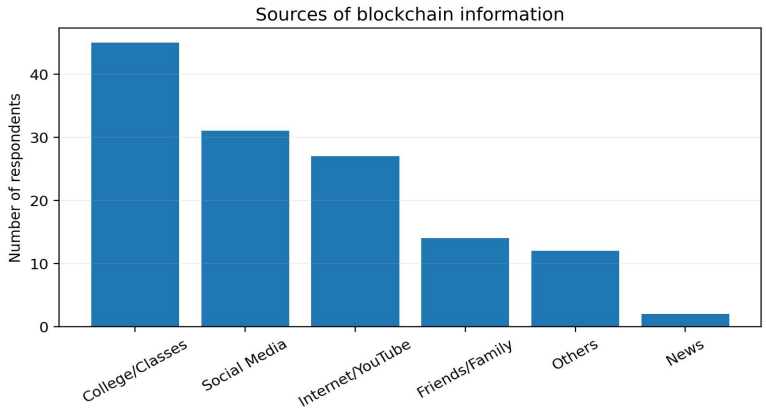
A total of 64.6% of respondents reported that they had heard of blockchain. Thus, basic recognition of the technology is present among a majority, although more than one-third reported no awareness.

Information source	Respondents	Percentage
College/Classes	45	34.6%
Social Media	31	23.8%
Internet/YouTube	27	20.8%
Friends/Family	14	10.8%
Others	12	9.2%
News	2	1.5%

College and classroom exposure is the most frequently reported source. Social media and Internet/YouTube also contribute substantially, indicating that blockchain awareness is shaped by both formal education and digital information environments. Multiple responses were permitted, so percentages do not total 100%.

7.3 Moving Beyond the Bitcoin Association





Primary association with blockchain	Respondents	Percentage
Bitcoin/Cryptocurrency	48	36.9%
All of the above	23	17.7%
Accounting	18	13.8%
Not sure	17	13.1%
Banking	16	12.3%

Business	8	6.2%
Total	130	100%

Bitcoin and cryptocurrency remain the most common association, selected by 36.9% of respondents. At the same time, accounting, banking and business also appear among the recognised areas, suggesting that some students are beginning to connect blockchain with broader commercial applications.

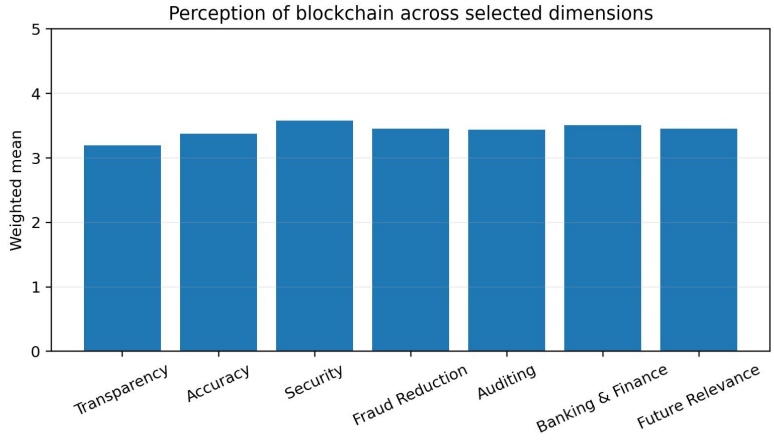
Awareness of applications beyond Bitcoin	Respondents	Percentage
Yes	57	43.8%
Not Sure	41	31.5%
No	32	24.6%
Total	130	100%

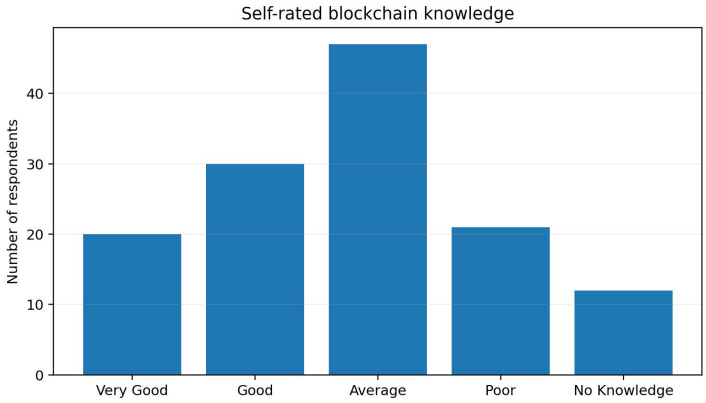
Only 43.8% clearly reported awareness of applications beyond Bitcoin. A further 31.5% were unsure, while 24.6% reported no such awareness. The difference between the 64.6% basic-awareness figure and the 43.8% wider-application figure is important: recognising the term blockchain does not necessarily imply understanding of its broader uses.

Self-rated knowledge	Respondents	Percentage
Very Good	20	15.4%
Good	30	23.1%
Average	47	36.2%
Poor	21	16.2%
No Knowledge	12	9.2%
Total	130	100%

The largest category is average knowledge at 36.2%. Only 15.4% describe their knowledge as very good. The distribution therefore suggests room for deeper conceptual and application-oriented learning.

7.4 Perceptions of Blockchain





Perception dimension	Weighted mean
Transparency	3.19
Accuracy	3.37
Security	3.58
Fraud Reduction	3.45
Auditing	3.44
Banking & Finance	3.51
Future Relevance	3.45
Overall weighted mean	3.43

On the five-point scale, the overall weighted mean is 3.43. Security records the highest mean at 3.58, followed by Banking and Finance at 3.51. Transparency has the lowest mean among the listed dimensions at 3.19. These scores indicate a generally favourable but not uniformly strong perception across the measured dimensions.

7.5 Hypothesis Testing

Test	Statistic	df	p-value	Decision at 5%
Awareness × Year of study	$\chi^2 = 9.082$	3	0.028	Significant association
Awareness × Bitcoin/other association	$\chi^2 = 18.620$	5	0.002	Significant association
Awareness × Applications beyond Bitcoin	$\chi^2 = 14.903$	2	0.001	Significant association
Awareness × Gender	$\chi^2 = 0.598$	2	0.742	Not significant
Awareness × Overall perception	$t = 0.471$	—	0.639	Not significant

The chi-square analysis shows statistically significant associations between awareness and year of study, between awareness and the way respondents associate blockchain with Bitcoin or other areas, and between awareness and awareness of applications beyond Bitcoin. In contrast, the gender test does not indicate a statistically significant association. The independent-samples t-test likewise does not show a statistically significant difference in overall perception between the aware and non-aware groups. Although the aware group has a higher mean perception score (3.46) than the non-aware group (3.38), the observed difference is not statistically significant at the 5% level.

8. Key Findings

- Basic awareness of blockchain is reported by 64.6% of respondents.
- Awareness is concentrated among respondents in the 18–20 age group and among third-year students.
- B.Com Accounting and Finance students form 55.4% of the sample.
- College/classes are the leading reported source of blockchain information.
- Bitcoin and cryptocurrency remain the most common association with blockchain.
- Only 43.8% clearly recognise applications beyond Bitcoin, while 31.5% are unsure.
- Average self-rated knowledge is the largest category, indicating that familiarity does not necessarily reflect deeper understanding.
- Security receives the highest perception score (3.58), while the overall weighted mean is 3.43.
- Awareness is significantly associated with year of study and with recognition of wider application areas.
- Gender is not significantly associated with blockchain awareness in this sample.
- The t-test does not indicate a statistically significant difference in overall perception between aware and non-aware respondents.

9. Educational Implications and Suggestions

- **Integrate blockchain into commerce subjects:** Blockchain concepts can be introduced through accounting, auditing, banking and finance topics rather than being treated only as a cryptocurrency-related subject.
- **Use application-based learning:** Short demonstrations, transaction-flow exercises and simple case studies can help students connect distributed-ledger concepts with business processes.
- **Strengthen expert and industry exposure:** Guest lectures, workshops and seminars can provide students with examples of how

blockchain-related systems are discussed and used in professional settings.

- **Develop reliable digital learning pathways:** Since social media and Internet/YouTube are important information sources, students should be guided towards credible academic and professional resources.
- **Clarify blockchain–cryptocurrency distinctions:** Teaching should explicitly distinguish the underlying technology from individual cryptocurrency applications.
- **Encourage interdisciplinary learning:** Commerce learners can benefit from accessible introductions to distributed ledgers, decentralisation, smart contracts, traceability and digital identity.
- **Address the knowledge-depth gap:** The sizeable average, poor and no-knowledge categories indicate the value of progressive learning activities rather than relying only on awareness-level exposure.

10. Limitations

The study has several limitations. The sample consists of 130 respondents selected through convenience sampling, so the results cannot be generalised to the wider population of commerce students. The study relies on self-reported awareness and perception measures, which may not fully capture actual technical knowledge. In addition, the cross-sectional design describes responses at one point in time and does not establish changes in awareness over time. The inclusion of respondents from different programmes and study levels provides a broader student perspective, but it also means that the sample is not restricted exclusively to undergraduate commerce students.

11. Conclusion

The study indicates a clear distinction between knowing about blockchain and understanding its broader business relevance. Nearly two-thirds of the respondents have heard of blockchain, yet fewer than half clearly recognise applications beyond Bitcoin. The continued dominance of the Bitcoin/cryptocurrency association suggests that blockchain education among commerce learners can be developed further through examples rooted in accounting, auditing, banking and finance.

The perception results show a generally favourable orientation towards blockchain, particularly in relation to security and financial applications. However, the statistical analysis indicates that greater awareness does not automatically translate into a significantly different overall perception score. The significant associations identified in the study, particularly those involving year of study and recognition of wider applications, point to the relevance of academic exposure and conceptual development.

For commerce education, the central implication is not simply to increase the number of students who have heard of blockchain, but to improve the depth and range of their understanding. Curriculum-linked examples, practical demonstrations, case studies and reliable learning resources can help students interpret blockchain as a business technology with applications that extend beyond cryptocurrency.

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