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A study on how Blockchain is reshaping cross-border payments: A comparative analysis of SWIFT and Ripple

Dr. S Saranya[1], Anand[2], Guru Govind S[2], Nithya Priya KC[2]
[1] Assistant Professor, Department of Commerce Accounting & Finance, Sona College of Arts and Science, Salem, Tamil Nadu, India
[2] Department of Commerce Accounting & Finance, Sona College of Arts and Science, Salem, Tamil Nadu, India

Abstract
Cross-border payments have traditionally relied on the SWIFT messaging network and a chain of correspondent banks, a system associated with high costs, multiple intermediaries, and settlement delays. Blockchain-based platforms, most notably Ripple (XRP), have emerged as a potential alternative promising near-instant settlement, lower fees, and greater transparency. This study examines respondents' awareness and perception of blockchain, SWIFT, and Ripple, and evaluates whether blockchain-based systems are reshaping cross-border payments. The research follows a descriptive design, and primary data were collected from 120 respondents using a structured questionnaire. The collected data were analyzed through Percentage Analysis, One-Way ANOVA, and Chi-Square Test. The findings reveal high awareness of SWIFT, blockchain, and Ripple among respondents, and a generally favourable perception of blockchain's speed and security. However, a majority of respondents still perceive SWIFT as the faster system in practice, pointing to a gap between awareness of blockchain's technical promise and its perceived real-world performance. The study concludes that while blockchain and Ripple are reshaping expectations around cross-border payments, trust-building, regulatory clarity, and user education remain critical for wider adoption.

Keywords: Blockchain, cross-border payments, Swift, Ripple (XRP), fintech, digital payments

Introduction

Cross-border payments form the backbone of global trade, remittances, and international commerce. For decades, the SWIFT (Society for Worldwide Interbank Financial Telecommunication) network has served as the standard messaging infrastructure connecting banks across the world, routing payments through a chain of correspondent banks. While reliable, this system is often criticised for high transaction costs, hidden currency-conversion charges, multiple intermediaries, and settlement times that can stretch from a few hours to several business days. The emergence of blockchain technology, and particularly Ripple's XRP Ledger, has introduced a new possibility: near-instant, low-cost, peer-to-peer value transfer that bypasses many of the intermediaries SWIFT depends on. Ripple markets XRP as a bridge currency capable of settling cross-border transactions in seconds rather than days, positioning itself as a direct challenger to the traditional correspondent banking model. As blockchain-based alternatives gain visibility, it becomes important to understand how users perceive these two systems — their awareness of each, their trust in blockchain's safety and speed claims, and their actual preference when choosing between traditional and blockchain-based transfer options. Therefore, this study examines respondents' awareness and perception of blockchain, SWIFT, and Ripple, and the emerging role of blockchain in reshaping cross-border payments.

Statement of problem

Despite growing awareness of blockchain technology and platforms like Ripple, SWIFT continues to dominate global cross-border payment infrastructure. Users regularly report payment delays, hidden fees, and limited transparency when transferring money internationally through traditional banking channels, yet adoption of blockchain-based alternatives remains uneven. This creates a gap between the theoretical advantages of blockchain-based payment systems and their actual adoption and perceived performance among users. Therefore, this study examines respondents' awareness, perception, and preference regarding SWIFT and Ripple-based cross-border payment systems, and the emerging challenges to blockchain adoption in this space.

Objectives of study

- To study respondents' awareness of SWIFT, blockchain technology, and Ripple (XRP).
- To examine respondents' perception of blockchain-based payment systems in comparison with the traditional SWIFT network.
- To analyse the association between demographic factors and respondents' perception of blockchain and Ripple.
- To assess whether blockchain and Ripple are perceived as reshaping the future of cross-border payments.

Research methodology

This study follows a descriptive research design to examine respondents' awareness and perception of blockchain, SWIFT, and Ripple (XRP) in the context of cross-border payments. The research is based on primary data collected through a structured questionnaire from 120 respondents using the convenience sampling method. The data collected were analyzed using Percentage Analysis, One-Way ANOVA, and Chi-Square Test.

- **Research Design:** Descriptive Research
- **Nature of Data:** Primary Data

- **Data Collection Tool:** Structured Questionnaire
- **Sample Size:** 120 Respondents
- **Statistical Tools:** Percentage Analysis, One-Way ANOVA, Chi-Square Test

Review of literature

Qiu, Zhang & Gao (2019) [1] investigated whether blockchain-based Ripple can realistically replace SWIFT using a structured SWOT analysis applied evenly to both systems across cost, speed, trust, and adoption barriers, finding that while Ripple can be faster and cheaper by removing intermediary banks, SWIFT retains a short-term advantage from its existing scale, with blockchain-based systems expected to reshape remittances only over the long term. Islam, Rashid, Rahman, Mohamad & Embang (2022) [2] examined the practical, technical requirements for a blockchain system to function at global banking scale against three persistent problems — weak security, high cost, and regulatory complexity — concluding that SWIFT remains the current market leader while Ripple is realistically positioned to become an important part of global finance if integration challenges are resolved. Eyo-Udo, Agho, Onukwulu, Sule & Azubuike (2024) [3] surveyed blockchain-based cross-border payment technologies including RippleNet and the Stellar Network, and concluded that unclear regulation, poor interoperability, and institutional resistance remain key barriers, recommending shared standards between governments, technology firms, and banks before mainstream adoption. Zhang (2020) [4] approached blockchain cross-border payments from a legal angle, reviewing blockchain pilot projects within China's Belt and Road Initiative, and concluded that legal harmonization across countries is as important as the technology itself. Owolabi, Hinneh, Uche, Adeniken & A. (2024) [5] designed a complete blockchain-based payment system intended to directly replace SWIFT, combining Proof of Stake validation, smart contracts, and data-feed oracles, and found real improvements over SWIFT in cost and speed, though noting that regulatory, trust, and legacy-integration challenges must still be resolved before real-world deployment.

Percentage analysis

Percentage analysis was carried out on the demographic and perception-related items of the questionnaire (N = 120) to describe the composition of the sample and the distribution of responses across categories.

Simple Percentage = (Number of Respondents / Total Number of Respondents) × 100

Gender Distribution of Respondents

Particulars	Frequency	Percentage (%)
Male	94	78.3
Female	26	21.7
Total	120	100.0

Source: Primary Data

Age Distribution of Respondents

Particulars	Frequency	Percentage (%)
Below 18	2	1.7
18–25	38	31.7
26–35	32	26.7
Above 35	48	40.0
Total	120	100.0

Source: Primary Data

Educational Qualification of Respondents

Particulars	Frequency	Percentage (%)
High School	2	1.7
Undergraduate	22	18.3
Postgraduate	14	11.7
Professional/Working	82	68.3
Total	120	100.0

Source: Primary Data

International Money Transfer Experience

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Particulars	Frequency	Percentage (%)
Never	23	19.2
Planning to in future	15	12.5
Yes, occasionally	43	35.8
Yes, frequently	39	32.5
Total	120	100.0

Source: Primary Data

Experience of Payment Delays

Particulars	Frequency	Percentage (%)
Never sent money internationally	21	17.5
Rarely	12	10.0
Sometimes	43	35.8
Yes, very often	44	36.7
Total	120	100.0

Source: Primary Data

Awareness of SWIFT

Particulars	Frequency	Percentage (%)
Never heard of it	9	7.5
Not sure	6	5.0
Heard of it but don't know much	27	22.5
Yes, I know it well	78	65.0
Total	120	100.0

Source: Primary Data

Awareness of Blockchain Technology

Particulars	Frequency	Percentage (%)
Never heard of it	6	5.0
Slightly aware	7	5.8
Heard of it but don't fully understand	33	27.5
Yes, I understand it well	74	61.7
Total	120	100.0

Source: Primary Data

Awareness of Ripple (XRP)

Particulars	Frequency	Percentage (%)
Never heard of it	18	15.0
Not sure	7	5.8
Heard of it but don't know much	22	18.3
Yes, I know it well	73	60.8
Total	120	100.0

Source: Primary Data

Preference for Blockchain-based Transfers

Particulars	Frequency	Percentage (%)
No, I prefer traditional banking	16	13.3
Need more information first	12	10.0
Maybe, if it's safe	31	25.8
Yes, definitely	61	50.8
Total	120	100.0

Source: Primary Data

Perceived Faster Payment System

Particulars	Frequency	Percentage (%)
Traditional banking (SWIFT)	69	57.5
Blockchain-based systems (Ripple)	25	20.8
Both are equally fast	7	5.8
Not sure	19	15.8
Total	120	100.0

Source: Primary Data

Overall: Blockchain Reshaping Cross-Border Payments

Particulars	Frequency	Percentage (%)
Strongly disagree	12	10.0
Disagree	7	5.8
Agree somewhat	38	31.7
Yes, strongly agree	63	52.5
Total	120	100.0

Source: Primary Data

Interpretation

The sample skews predominantly male (78.3%), with the largest age group being Above 35 years (40.0%) and a majority classified as Professional/Working (68.3%). A large share of respondents has direct experience with international money transfers, either occasionally or frequently (68.3% combined), and among these, over 70% report facing payment delays sometimes or very often — a key pain points underlying interest in alternatives to SWIFT. Awareness levels are high across the board: 65.0% know SWIFT well, 61.7% understand blockchain technology well, and 60.8% know Ripple (XRP) well. Half of the respondents (50.8%) say they would definitely prefer a blockchain-based transfer system, and a combined 84.2% agree, somewhat or strongly, that blockchain is reshaping cross-border payments.

Yet, despite this favourable outlook, 57.5% still perceive traditional banking (SWIFT) as the faster system in practice, compared to only 20.8% who favour blockchain-based systems on this dimension — indicating that awareness and optimism about blockchain have not yet fully translated into a perception of superior real-world performance.

One-way anova

Awareness of Ripple (XRP) by International Money Transfer Experience

A one-way ANOVA was conducted to test whether respondents' awareness of Ripple (XRP) differs significantly across the four International Money Transfer Experience groups (Never, Planning to in future, Yes occasionally, Yes frequently).

Particulars	Comparison	Sum of Sq.	df	Mean Sq.	F	Sig.
Awareness of Ripple (XRP)	Between Groups	25.722	3	8.574	8.373	0.000
	Within Groups	118.778	116	1.024		
	Total	144.500	119			

Source: Primary Data

F (3,116) = 8.373, p = 0.000

Interpretation

Since p < .01, the null hypothesis of equal means is rejected. International money transfer experience has a statistically significant effect on respondents' awareness of Ripple (XRP). Respondents with greater hands-on experience of international transfers report noticeably higher awareness of Ripple than those with little or no transfer experience. This supports the broader literature finding that direct exposure to cross-border payment friction drives users toward awareness of blockchain-based alternatives (Eyo-Udo *et al*., 2024; Islam *et al*., 2022) [2, 3].

Discussion

The study collected responses from 120 respondents with varying degrees of exposure to international money transfers. The majority demonstrated strong awareness of SWIFT, blockchain, and Ripple, and expressed broadly favourable views of blockchain's safety and transformative potential. Flexible, blockchain-based transfer options were also highly preferred, reflecting growing openness to alternatives beyond traditional banking. At the same time, a majority of respondents still perceive SWIFT as the faster system in practice, revealing a gap between awareness of blockchain's theoretical speed advantage and confidence in its real-world performance. The findings further indicate that international transfer experience and age group significantly shape respondents' perceptions, suggesting that direct exposure to cross-border payment friction, more than demographic identity alone, drives openness to blockchain-based alternatives. These results suggest that while blockchain and Ripple are reshaping expectations around cross-border payments, closing the gap between perceived and demonstrated performance, along with continued regulatory clarity and user education, remains vital for wider adoption.

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