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Research Article

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Impact of Digital Transformation on Nepalese Stock Market

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Abstract

The digital transformation of Nepal's stock market has reshaped its operational framework by improving accessibility, efficiency, and transparency. This shift has been driven by the introduction of online trading platforms such as the NEPSE Online Trading System (NOTS) and the Central Depository System and Clearing Limited (CDSC). This study examines the effectiveness of online trading in Nepal's share market, focusing on investor awareness, operational challenges, and managerial solutions. The findings reveal that online trading has enhanced market accessibility and efficiency, leading to increased trading volumes and greater investor participation. However, the system continues to face significant challenges, including technological limitations, server inefficiencies, outdated infrastructure, and unstable internet connectivity. Limited digital literacy and inadequate investor education programs further restrict the effective use of online trading platforms. Moreover, regulatory gaps and weak cybersecurity measures undermine system reliability and investor trust. Despite growing adoption, many investors remain unaware of the full potential of digital trading. To address these issues, the study recommends upgrading technological infrastructure, strengthening regulatory and cybersecurity frameworks, and expanding investor education initiatives. The adoption of advanced technologies such as artificial intelligence and blockchain could further enhance security, transparency, and operational efficiency, enabling Nepal's stock market to align with global financial standards.

Keywords: digital transformation, stock market, NEPSE, securities turnover, online trading system

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Introduction

Digital transformation entails the integration of digital technologies to enhance both operational efficiency and customer experiences. In Nepal, the stock market is undergoing a transformative shift from traditional practices towards a technology-oriented ecosystem. The implementation of platforms like the NEPSE Online Trading System (NOTS), the Central Depository System and Clearing Limited (CDSC), Connectivity and Integration with local banks for fund transfer, and various mobile applications is redefining investment practices. This shift democratizes access to financial services and aligns Nepal's capital market with international standards. Dhakal (2024) states Fintech innovations have significantly boosted operational efficiency and service quality in Nepal's financial sector. Both startups and established firms are utilizing fintech solutions to optimize processes

like loan disbursement, credit evaluation, and risk management. Mobile payment platforms such as Khalti and IME Pay have become increasingly popular, enabling smooth transactions and reducing dependence on cash. Additionally, blockchain technology shows potential for improving transparency and security in financial dealings, though its implementation in Nepal remains in the early stages.

Pant (2019) described Mobile banking and digital financial services are essential drivers of financial inclusion. In Nepal, however, the full potential of mobile banking remains underutilized. With the widespread reach of mobile technology, mobile banking holds significant promise for expanding access to financial services, especially for underserved populations in remote regions where establishing physical bank branches is challenging due to infrastructure limitations.

Globally, the rise of digital economies has revolutionized financial markets. Online trading systems have fundamentally altered the ways securities are bought and sold, offering significant advantages such as real-time access, reduced transaction costs, and wider market participation. In Nepal, the introduction of online trading in 2020 represented a pivotal advancement in the financial sector, marking a move towards modernization. Despite this progress, the Nepalese share market, being a late adopter of digital trading technology, encounters unique challenges. These include insufficient infrastructure, limited awareness among investors, and weak regulatory oversight. Addressing these issues is critical for realizing the full potential of digital trading in Nepal.

The NEPSE Online Trading System (NOTS) is the principal platform utilized by the Nepal Stock Exchange for electronic trading. Launched in 2020, NOTS has enabled investors and brokers to engage in trading remotely, facilitated by internet based platforms. Key features of NOTS include online trading capabilities, real-time market data, personalized dashboards, integration with authorized brokers, and secure login mechanisms, including two-factor authentication. Despite these advancements, challenges such as server instability and user experience limitations persist.

Nepal's journey towards digitizing its financial markets has been supported by increased internet and mobile penetration, government policies, and financial literacy campaigns. Regulatory bodies like NEPSE and the Securities Board of Nepal (SEBON) have played pivotal roles in this transformation by introducing electronic trading systems. Furthermore, platforms like CDSC streamline the dematerialization of shares, enabling secure and efficient electronic share transfers. Payment gateways and mobile banking systems, such as eSewa and Khalti, further simplify the funding of trading accounts and transaction fee payments. Online platforms now provide investors with real-time market data and analytics, aiding informed decision-making.

While the digital transformation has brought accessibility and convenience, Nepal's stock market remains in its nascent stages. Established in 1993, the market is relatively small, with only about 244 listed companies, mainly in banking, hydropower, and manufacturing sectors. Investor participation is largely in increase trends. The introduction of online trading platforms has facilitated accessibility but highlighted technological deficiencies, including server inefficiencies and outdated systems. Despite regulatory efforts by SEBON to enhance transparency and investor protection, challenges remain. Weak enforcement and regulatory gaps hinder the market's ability to meet global standards. Nevertheless, online trading is fostering a more informed and engaged investor base, gradually shifting the market towards broader inclusivity and efficiency. Addressing these challenges through strategic reforms, infrastructure enhancement, and investor education is essential for the continued growth and modernization of Nepal's stock market.

The adoption of online trading in Nepal's stock market represents a significant leap toward

modem financial practices. However, this shift has exposed several challenges that hinder its full potential. Technological limitations, such as server inefficiencies and outdated trading platforms, disrupt the seamless operation of online trading and diminish user experiences. Furthermore, low levels of digital literacy among investors and limited internet penetration in rural areas restrict the system's accessibility and usability. Many potential investors remain excluded from the benefits of online trading due to inadequate awareness and education about its tools and processes.

Regulatory gaps further complicate the situation. The absence of robust governance mechanisms to address cybersecurity risks and the slow adaptation to emerging technologies leave the system vulnerable to misuse and inefficiencies. These systemic issues have intensified investor dissatisfaction and raised concerns about the overall effectiveness of Nepal's digital transformation in the financial sector.

Despite these challenges, online trading holds significant promise for improving the efficiency, accessibility, and security of Nepal's stock market. Realizing this potential requires targeted efforts, including upgrading technological infrastructure, enhancing investor education, strengthening regulatory frameworks, and expanding internet accessibility to underserved areas. Furthermore, integrating advanced analytics tools can empower investors with better decision-making capabilities and foster greater confidence in the system.

As Nepal continues its digital transformation journey, several critical questions must be addressed to ensure sustainable growth and inclusivity in the financial market:

- How effectively has digital transformation improved the efficiency, accessibility, and security ofNepal's stock market?
- What barriers are preventing the full potential of digital adoption in Nepal's financial landscape?
- What strategies can bridge the gap between technological advancements and user readiness?

Research Objective

This study aims to assess the effectiveness of online trading systems in Nepal's share market, focusing on identifying key challenges faced by investors and stakeholders, evaluating the impact of investor education on trading outcomes, and proposing actionable solutions to improve the digital trading ecosystem. It seeks to contribute to the ongoing digital transformation of Nepal's stock market by analysing current systems, identifying barriers, and recommending strategies to enhance efficiency and accessibility for all stakeholders. Some specific objectives are:

- To assess the current state of digital transformation in Nepal's stock market, including systems like NOTS, CDSC, and ASBA.
- To identify the primary challenges and limitations in online trading.
- To propose actionable recommendations for improving the effectiveness and adoption of digital trading systems.

Literature Review

Phokharel (2023) described that Digital capitalism has contributed to enhancing financial inclusion in Nepal by offering financial services to previously unbanked or underserved communities, particularly in rural areas, through mobile banking, digital wallets, and online payment platforms.

Bhujel (2024) investigated how customer trust (CT), data security (DAS), perceived usefulness (PU), and perceived ease of use (PPEU) impact the intention of commercial bank customers in Kathmandu Valley to adopt fintech services. The study is grounded in the Technology Acceptance Model (TAM).

Nepal Government '2019 DIGITAL NEPAL FRAMEWORK' stated Nepal's digital transformation, particularly in automating

government agencies, has faced several obstacles. IT and automation projects in government sectors often experience delays and budget overruns. Furthermore, many projects show a disconnect between their activities and intended outcomes, highlighting the absence of effective oversight and monitoring systems. These issues could escalate significantly in a large-scale initiative like Digital Nepal if projects under the program are not systematically monitored and regularly assessed for their impact. Therefore, it is highly recommended to establish a robust monitoring and evaluation framework as an integral part of the initiative's overall design.

Roca et al. (2009) concluded his research that when users perceive a high level of security and have a long-term commercial relationship (such as in online trading), trust becomes a crucial factor influencing their behavioural intentions. As a result, e-investors are more willing to share personal and financial information with fewer concerns. Therefore, managers of online trading systems should prioritize enhancing system security. Integrating strong security measures during the design phase is essential because e-investors are more likely to use the platform when they believe their transaction information is secure and protected from third-party access.

Nepal (2023) reported in his research valuable insights into financial inclusion, economic growth indicators, and program results. Micro-finance institutions have played a key role in promoting financial inclusion in Nepal by providing financial services to low-income individuals and small businesses that lack access to the formal banking system. Financial inclusion is positively linked to economic growth in Nepal, as access to credit and formal financial services has supported both short-term and long-term economic development. Additionally, financial inclusion benefits the economy by boosting savings rates, expanding access to credit, reducing income inequality, promoting financial stability, and fostering the growth of the digital economy.

Bhandari (2023) stated in the research that the Nepalese capital market has experienced growth recently. However, investors and potential stakeholders have expressed dissatisfaction due to a lack of financial instruments, limited market diversification, and fewer investment opportunities. Participation in the real estate market remains low in Nepal, with companies in the real sector making up only about 20% of all listed firms. The dominance of banks in the secondary market means that the capital market does not fully reflect the economy. Public sentiment is crucial in the secondary market. The development of internet access, trade reporting, and credit rating systems has contributed to the market's growth. To address existing challenges in the capital market, collaboration between the government and regulatory bodies is essential.

According to Shah et al. (2024) the challenges and opportunities of incorporating Artificial Intelligence (AI) into management education has advanced significantly with the rise of technology. AI holds the potential to transform management education by enabling personalized learning experiences, increasing administrative efficiency, and supporting data-driven decision-making. However, its adoption faces obstacles such as the digital divide, reluctance among educators to embrace change, concerns over data privacy, and the high costs associated with technology and training.

The findings of Rana (2024) indicate that many respondents are comfortable using financial tools and software, though some still experience discomfort or uncertainty. The study also emphasizes a growing interest in financial education, with a majority actively seeking materials and resources to enhance their knowledge.

Securities Board of Nepal (SEBON, 2022) documented a remarkable 40% surge in trading volumes following the implementation of the Nepal Online Trading System (NOTS). This digital initiative is highlighted as a pivotal factor in boosting investor participation and streamlining

market operations. SEBON's analysis further pointed to significant growth in digital transaction volumes, which has been instrumental in democratizing market access for a wider range of participants, particularly retail investors.

The Nepal Rastra Bank (NRB) reports significant growth in mobile and internet banking from 2016 to 2020. The number of mobile banking users increased more than five times, while internet banking users more than doubled. This expansion has been accompanied by a rise in digital payment options, with 14 licensed non-bank payment service providers (PSPs) now operating in Nepal. Leading providers include eSewa, Khalti, IMEPay, and PrabhuPay. While digital payments are primarily used for mobile top-ups and post-paid mobile bill payments (80 percent for eSewa), they are also utilized for utility payments, fund deposits, bus ticket purchases, and school fee payments (USAID, 2022).

Huang et al. (2005) aimed to identify the key factors influencing brokers in Taiwan when deciding to adopt an online stock trading system. The study examined 16 factors- cost of implementation, perceived ease of use, perceived usefulness, technological infrastructure, compatibility with existing systems, security concerns, regulatory compliance, market demand, customer preferences, competitive pressure, top management support, organizational readiness, availability of skilled personnel, system reliability, vendor support, and return on investment (ROI) affecting the decision and found that five of them- Perceived Usefulness, Cost of Implementation, Technological Infrastructure, Customer Demand, Regulatory Compliance significantly differentiate adopters from non-adopters. Additionally, the research offers valuable insights and recommendations for academics, policymakers, and professionals involved in the field of online stock trading.

Lamichhane (2017) focused on examining various aspects of stock turnover and the value coverage within the stock market. To assess the market's condition, a descriptive research design has been employed. The turnover in the securities market is a key behavioural aspect of the stock market. It is primarily influenced by the demand and supply of securities, and it reflects factors such as the number of trading share units, the value of shares traded, and the principles of Signalling Theory. Consequently, online trading is likely to establish itself as a more dependable investment platform, offering greater opportunities for large-scale investments in the Nepalese stock market.

The World Bank (2021) analysed the global best practices in digitalizing stock markets. Their report highlights cutting-edge technologies such as blockchain and artificial intelligence (Al) and evaluates their potential applications in enhancing market efficiency in Nepal. The insights provided serve as a roadmap for integrating these innovative tools to overcome operational inefficiencies and elevate the performance of Nepal's financial markets to international standards. These studies highlight digitization's dual impact: globally, ESG-driven digital disclosures elevate stock valuations by mitigating risks and attracting sustainable investments (Celestin & Mishra, 2025); locally, in Nepal, it streamlines working capital flows to enhance manufacturing profitability amid stock market maturation (Gautam & Mishra, 2024). Challenges persist, including regulatory gaps and cybersecurity, necessitating adaptive leadership for sustained market evolution.

These studies collectively provided a nuanced understanding of the role of digital platforms, policy frameworks, technological innovations, and systemic improvements in revolutionizing Nepal's stock trading landscape. They underscore the need for continued investment in technology and infrastructure to ensure equitable and efficient market access.

Methodology

This study uses an explanatory research design, combining qualitative and quantitative approaches.

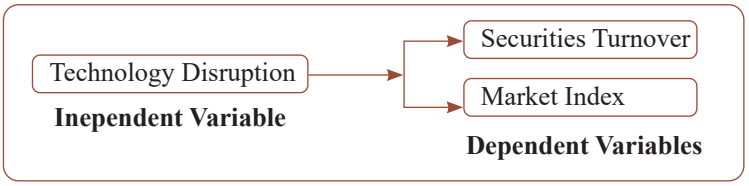
It is based on secondary data, secondary sources included NEPSE reports and academic literature. Statistical methods were applied for descriptive analysis to examine investor behaviour changes after digitalisation in stock market and address systemic challenges.

Conceptual Framework

This conceptual framework aims to explore the influence of technological advancements on the dynamics of the stock market, focusing on how these changes drive trading activity and overall market performance in the context ofNepal.

Figure 1

Conceptual Framework



Results and Discussion

Quantitative Analysis involves trading volume, which is examined data from NEPSE, SEBON, and CDSC to compare trading volumes and market index before and after digital system implementation. Settlement Time compared settlement durations pre- and post-electronic adoption.

Technology Disruption

Technology disruption represents changes or advancements in technology that significantly impact the operations of online trading systems, financial markets, and investor behaviour. In the context of Nepal's stock market, technology disruption may include the adoption of online trading platforms, the development of faster and more reliable trade execution systems, and the integration of advanced analytics and algorithms. These disruptions influenced investor participation, trading volume, and the efficiency of the market.

ASBA (Application Supported by Blocked Amount)

ASBA is a mechanism where the money required for an investment in securities is temporarily locked in the investor's bank account. This ensures that the funds remain accessible until the allotment is finalized. Once the securities are allocated, only the required amount is deducted, and the remaining funds are released. Investors can directly apply for shares or debentures from their own bank accounts without needing to visit specific collection centres.

C-ASBA (Centralized Application Supported by Blocked Amount)

C-ASBA, an extension of ASBA, centralizes the application process for securities by integrating banking systems with demat accounts using advanced software. This system, introduced on Falgun 11, 2074, ensures a streamlined and verified process. Banks provide a CRN (C-ASBA Registration Number) to investors, enabling them to apply for securities digitally or through physical forms ifintemet access is limited.

NEPSE Online Trading System (NOTS)

The NEPSE Online Trading System is a modern platform introduced by the Nepal Stock Exchange (NEPSE) to facilitate electronic trading of stocks and securities. It has transformed the traditional trading process, offering greater efficiency, accessibility, and convenience to investors. With this system, investors can trade from anywhere with an internet connection, eliminating the need for physical visits to brokerage offices. The platform is integrated with demat accounts, allowing seamless transactions and real-

time updates on stock prices and market indices, enabling informed decision-making. Payments for transactions can be made through banks or digital wallets, further streamlining the process.

The online trading system offers numerous benefits, including convenience, transparency, and efficiency. However, it also comes with challenges such as system lags during high trading volumes, dependence on stable internet connectivity, and limited awareness among some investors about its usage. Additionally, delays in broker confirmations and fund transfers, along with the need for stronger regulatory oversight, remain areas for improvement. To start trading online, investors must open a demat account, obtain a C-ASBA Registration Number (CRN) from their bank, register with a licensed NEPSE broker, and access the Trading Management System (TMS) using broker-provided credentials.

Despite the challenges, the NEPSE Online Trading System is a significant milestone in Nepal's financial sector, making the stock market more accessible and transparent. Continuous advancements in technology, investor education, and regulatory frameworks are essential to further enhance its effectiveness and user experience.

The online trading system in Nepal was introduced two decades after the initiation of the country's capital market. The Nepal Stock Exchange (NEPSE) officially launched the online trading platform on Kartik 20, 2075 BS, inaugurated by Finance Minister Dr. Yuvraj Khatiwada. This marked a significant advancement in Nepal's financial sector.

The Nepal Stock Exchange was initially established in 2050 BS, introducing a regular share market. In its early years, brokers manually registered and processed orders by writing them on a whiteboard, while shares were traded using paper certificates. However, in 2072 BS, Nepal transitioned to paperless trading by converting physical share certificates into electronic formats.

Trade Management System (TMS)

To facilitate online trading, the Trade Management System (TMS) was implemented, providing a bridge between investors, brokers, and NEPSE. This system allows investors to place buy and sell orders online using computers, laptops, tablets, or mobile devices. However, to access the online trading system, investors must first visit a broker to obtain their user credentials.

Depository System and Clearing Ltd. (CDSC)

The Central Depository System and Clearing Ltd. (CDSC) is a crucial entity in Nepal's financial market, responsible for modernizing and streamlining the handling of securities. It facilitates the dematerialization of physical share certificates into electronic formats, making the trading and transfer of ownership more efficient and secure. CDSC manages demat accounts, where investors can electronically hold their securities, ensuring seamless clearing and settlement of trades in collaboration with NEPSE and brokers. Additionally, CDSC plays a vital role in implementing the Centralized Application Supported by Blocked Amount (C-ASBA) system, which verifies investors' bank and beneficiary accounts for IPOs, FPOs, and rights issues. Through its digital platform and mobile application, Mero Share, CDSC allows investors to manage their portfolios, apply for public offerings, and monitor transactions easily. By adhering to regulatory standards set by SEBON, CDSC ensures transparency, security, and efficiency in Nepal's capital market, enhancing investor confidence and streamlining securities operations.

Securities Turnover

Securities turnover refers to the total value of stocks traded within a specific period. It is a measure of market activity and liquidity, indicating the volume of trading occurring due to technological advancements. Increased efficiency, lower transaction costs, and better access through online trading platforms can potentially raise market turnover.

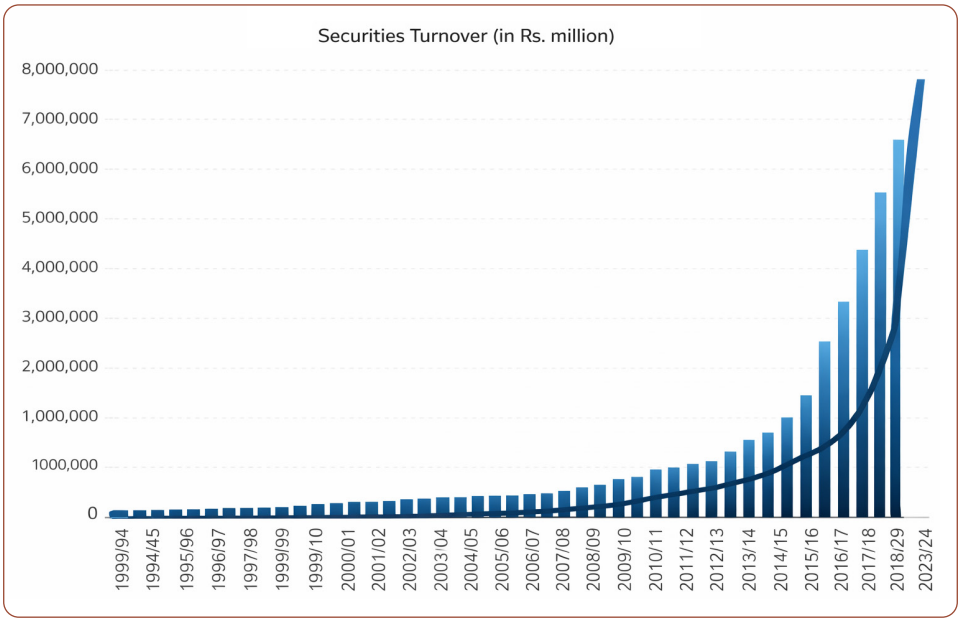
Table 1

Securities Turnover during 1993/94 to 2023/24

Fiscal Year	Securities Turnover in Rs. Million	% Change	Fiscal Year	Securities Turnover in Rs. Million	% Change
1993/94	441.6		2009/10	11,851.10	-45.34
1994/95	1054.3	138.75	2010/11	6665.3	-43.76
1995/96	215.6	-79.55	2011/12	10,273	54.13
1996/97	416.2	93.04	2012/13	22,048.80	114.63
1997/98	202.6	-51.32	2013/14	77,298.50	250.58
1998/99	1500	640.38	2014/15	65,331.50	-15.48
1999/00	1155	-23.00	2015/16	1,63,957.70	150.96
2000/01	2344.2	102.96	2016/17	2,04,788. I 0	24.90
2001/02	1540.6	-34.28	2017/18	1,21,299.60	-40.77
2002/03	575.8	-62.62	2018/19	1,10,067.10	-9.26
2003/04	2144.3	272.40	2019/20	1,50,039.50	36.32
2004/05	4507.7	110.22	2020/21	14,54,443.90	869.37
2005/06	3451.4	-23.43	2021/22	12,02,101.40	-17.35
2006/07	8360.1	142.22	2022/23	51,31,119.70	326.85
2007/08	22,820.80	172.97	2023/24	68,54,193.50	33.58
2008/09	21,681.10	-4.99			

Figure 2

Securities Turnover during 1993/94 to 2023/24



For most of the earlier years, the turnover remained relatively flat and minimal, showing little growth up until around 2018/19.A noticeable increase began in 2019/20, followed by a sharp spike in 2020/21 and a substantial surge in 2021/22. The turnover skyrocketed to nearly 7 million Rs in 2023/24, marking an unprecedented growth. This dramatic rise reflects increased market activity, possibly due to heightened investor participation, economic reforms, or the adoption of online trading platforms, which have made securities trading more accessible and efficient in Nepal.

Market Index

A market index represents the performance of a segment of the stock market. It is an aggregate value calculated from the prices of selected stocks, reflecting overall market sentiment and trends. Technology disruption can impact the market index by influencing investor decisions, stock price volatility, and the speed at which market information is processed and acted upon.

Table 2

Market Index during 1993/94 to 2023/24

Fiscal Year	NEPSE Index	% Change	Fiscal Year	NEPSE Index	% Change
1993/94	226.03		2009/10	477.73	-36.23
1994/95	195.48	-13.52	2010/11	362.85	-24.05
1995/96	185.61	-5.05	2011/12	389.74	7.41
1996/97	176.31	-5.01	2012/13	518.3	32.99
1997/98	163.35	-7.35	2013/14	1036.1	99.90
1998/99	216.92	32.79	2014/15	961.23	-7.23
1999/00	360.7	66.28	2015/16	1718.2	78.75
2000/01	348.4	-3.41	2016/17	1582.67	-7.89
2001/02	227.54	-34.69	2017/18	1212.36	-23.40
2002/03	204.86	-9.97	2018/19	1259.02	3.85
2003/04	222.04	8.39	2019/20	1362.35	8.21
2004/05	286.7	29.12	2020/21	2883.41	111.65
2005/06	386.83	34.93	2021/22	2009.47	-30.31
2006/07	683.9	76.80	2022/23	3,044.86	51.53
2007/08	963.4	40.87	2023/24	2,960.83	-2.76
2008/09	749.1	-22.24			

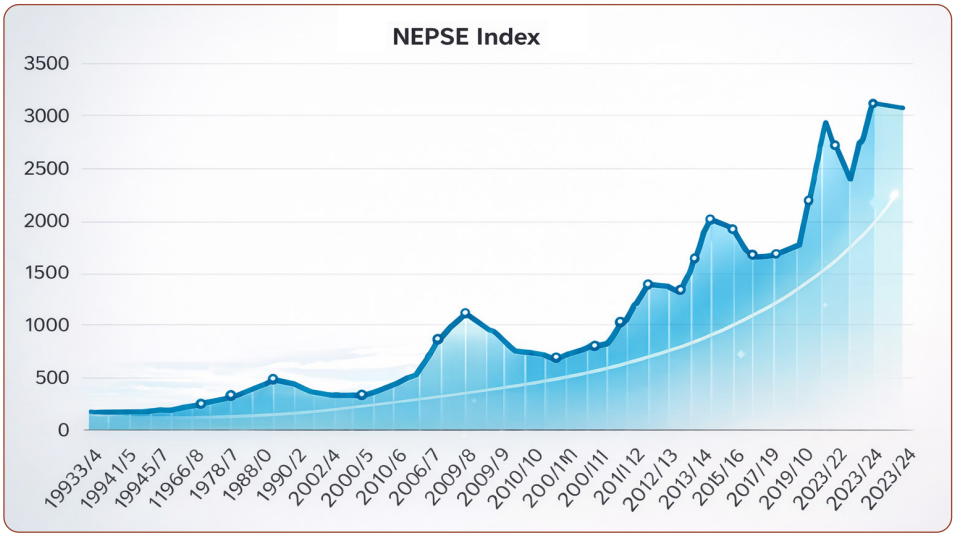
The NEPSE Index chart presents the progression of Nepal's stock market from 1993/94 to 2023/24. In the early years, the index remained relatively flat, staying below 500 points until 2005/06. A sharp increase occurred in 2006/07, pushing the index near 1,000 points, followed by a notable decline. Gradual growth resumed after 2012/13, with the index surpassing 1,500 points by 2015/16. The most significant surge took place between 2019/20 and 2021/22 when the index skyrocketed past 3,000 points, reflecting heightened investor interest and market expansion. However, a slight correction is evident in 2022/23 and 2023/24, with the index stabilizing just above 2,500 points. This pattern highlights the stock market's volatility and the impact of economic conditions, investor behavior, and market reforms on Nepal's financial sector.

From FY 1993/94 to FY 2023/24, Nepal's securities turnover and NEPSE Index have experienced significant fluctuations. Notable spikes occurred in FY 1998/99 (640.38% turnover growth) and FY 2020/21 (869.37% turnover growth), highlighting periods of rapid market expansion. Conversely, FY 1995/96 and FY 2009/10 saw severe downturns in both turnover and the NEPSE Index, reflecting market instability. Generally, an increase in securities turnover aligned with

a rising NEPSE Index, suggesting positive market sentiment (e.g., FY 2015/16 and FY 2020/21). However, there were exceptions where turnover increased, but the NEPSE Index declined, such as in FY 2016/17, reflecting possible speculative trading without real market growth.

Figure 2

Market Index during 1993/94 to 2023/24



Major Findings

The introduction of the NEPSE Online Trading System (NOTS) and Central Depository System and Clearing Limited (CDSC) has led to a significant surge in investor participation and trading volumes, reflecting the positive impact of digitalizationon Nepal's stock market.

- Digital trading systems have reduced transaction times and manual errors, contributing to faster settlement cycles (T+2 days) and improving overall market efficiency.
- CDSC has minimized fraudulent activities by improved transparency and security replacing physical certificates with real-time security tracking.
- Addressing existing challenges requires strategic reforms, including modernization of trading infrastructure, stronger regulatory frameworks, enhanced investor education, and the integration of advanced technologies like blockchain & artificial intelligence.

The Nepalese stock market is heavily concentrated in banking, hydropower, and manufacturing sectors, with limited diversification. This lack of variety restricts investment opportunities and market growth.

Despite the transition to digital trading, technological limitations such as server inefficiencies, outdated trading platforms, and poor

user interfaces continue to disrupt seamless online trading operations.

Poor internet connectivity & inconsistent electricity supply in rural regions restrict access to online trading platforms, limiting the financial inclusion of potential investors from these areas.

Many investors still rely on brokers for trading activities due to the complexity of online trading systems and the absence of user-friendly platforms, highlighting a gap between technology adoption and user readiness.

Many investors find current designs difficult to use, emphasizing the need for simplified platforms. It is complex interfaces.

Conclusion

The research highlights a pos1t1ve link between digital transformation and greater market involvement in Nepal's online trading sector. The implementation of tools like NOTS and ASBA has decreased manual errors and delays. However, issues such as low awareness and inconsistent infrastructure remain significant barriers. Compared to regional peers, Nepal is slower to adopt advanced technologies like AI-driven analytics and blockchain for enhanced security. Technological factors remain a significant challenge for Nepal's online trading system, with out-dated platforms, server lags, and poor user experience hindering effective market participation. Economic and political instability further exacerbate market volatility, undermining investor confidence. While younger, tech-savvy investors dominate the market, systemic inefficiencies, lack of modern technology, and inadequate regulatory frameworks persist. The Nepal Stock Exchange (NEPSE), brokers, and policymakers must address these issues through a multi-pronged approach. Upgrading technological infrastructure, including modernizing trading platforms, enhancing server capacity, and integrating advanced technologies like blockchain and AI, is crucial for improving transaction security and market efficiency. Expanding investor education through workshops, user-friendly tutorials, and digital channels can empower investors and reduce reliance on brokers. Strengthening regulatory frameworks by implementing robust cybersecurity measures, enforcing compliance, and introducing investor protection policies will enhance trust. Improving accessibility in rural areas by expanding internet connectivity, simplifying user interfaces, and promoting mobile trading apps can foster inclusive growth. Encouraging market diversification through new financial instruments and SME listings, along with improving broker efficiency and promoting policy reforms, will further stabilize the trading ecosystem. Benchmarking against regional leaders and adopting sustainable investment practices can help Nepal's online trading sector achieve its transformative potential, driving long-term market growth and increased investor participation.

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