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About the Journal

IIFT International Business and Management Review is a biannual peer-reviewed journal from the Indian Institute of Foreign Trade. The Indian Institute of Foreign Trade (IIFT), a deemed to be university, was set up in 1963 by the Ministry of Commerce & Industry, Government of India, as an Institution with a focus on imparting knowledge through research and training in international business and trade. It ranks among the top 10 Business Schools in the country for the past two decades and earned AACSB Accreditation.

IIFT International Business and Management Review tends to highlight the significance of emerging issues on national and international front, addressing challenges and reflecting opportunities relating to International business and management. The interdependence among businesses in a liberalized world increase the intricacies of business practices and make way for a wide range of business research problems. This journal will cater to all those research questions that are arising in the new challenging business world intersected with the cross-border issues. The Covid-19 pandemic has completely changed the dynamics of international markets and how they function. This brings a turnaround in theories, models and phenomena which are obsolete and not applicable to the world hit by a pandemic. Therefore, it makes more sense now to introduce the International Business and Management Review Journal as it will be addressing all the contemporary issues in International Business. It is an open access journal under a Creative Commons License (CC-BY-NC).

Aims and Scope

The journal aims at bringing together managerial issues, practices and innovations which are useful to scholars, educators, managers, consumers, other societal stakeholders and policy makers around the world. It aims to play a significant role in shaping the content and boundaries of the management discipline while simultaneously covering the international scope of businesses. With the aim of impacting the management education and industry practices, *IIFT International Business and Management Review* (IBMR) publishes innovative empirical and conceptual articles with advance knowledge of management and international business, and provides the readers with broad-spectrum of high-quality papers on evolving trends, insights and philosophies in management. All articles appearing in the journal will be peer reviewed to ensure academic rigor and practical relevance and will publish studies from all geographical regions. Discussion of newer forms of cross-border business activity, such as strategic alliances and global sourcing, is also encouraged. IBMR also aims to advance the exploration of issues that include the implications of customer orientation in multinational business, cross-cultural market segmentation and market research.

The journal welcomes submissions pertaining to various multidisciplinary studies such as –

- Accounting and Finance
- International Business & Strategic Management
- Marketing & Sales
- Corporate Governance, Business Ethics and Law
- Human Resource Management Organizational Behavior
- Managerial Economics
- Entrepreneurship & Business Ventures
- Operations Management & Supply Chain
- Management Information Systems

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Editorial

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The contours of global economics at the moment are being redrawn by a composite interaction of climate, geopolitics, finance and technology. What once appeared as recurring headwinds have now progressed into structural rearrangements that are redefining operations, Innovation, production, international business and trade, and capital flows across the world. The global economy of 2026 and beyond is not merely improving from crises it is recalibrating its very groundworks and fundamentals.

From decoupling to "de-risking," the dictionary of global trade has undergone a seismic alteration. Emerging economies specifically in Asia and Africa are not just recipients of globalization; they are now its new architects. India, with its expanding manufacturing base, digital infrastructure, and demographic advantage, stands at the epicenter of this transformation. Simultaneously, the global North is navigating inflationary pressures, energy transitions, and supply chain security concerns that demand strategic rebalancing rather than isolationism.

Technology remains both a disruptor and a democratizer. Artificial intelligence, blockchain-led transparency, and digital currencies are redefining how nations trust, trade, transact. Yet, the promise of these innovations is shaded by the dangers of algorithmic asymmetries, data dominations, and ethical vulnerabilities. This poses challenge to policymakers to craft frameworks that are both comprehensive and future-ready.

The covid pandemic exposed global economic system to fragilities. climate change continues to test its resistance. economies struggle for carbon neutrality. the transition to sustainable and green finance, blue and circular business models redefines competitiveness. The Sustainable Development Goals (SDGs) striving to generate moral imperatives.

For India and other emerging economies, the connection between sustainability and growth offers an unparalleled opportunities to leapfrog to build innovation-led inclusive growth. New paradigm shift is expected in south south cooperation as a new axis of global integration for India.

As a bridge between academia and policy, *IIFT-IBMR* aims to foster critical review into the challenges and prospects to redefine contemporary world. In this

spirit, the current issue presents a rich collection of research articles and perspectives into global economic transformations through empirical depth and conceptual clarity.

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Article

Determinants of Vietnamese Consumers' Cross-border Online Shopping Intentions: Evidence from Chinese E-commerce Platforms

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Abstract

This study determines the key factors influencing Vietnamese consumers' intentions to shop on Chinese cross-border e-commerce platforms. Through quantitative methods and survey data from 441 respondents in Hanoi, mainly young people, including students and office staff, the study identified four influencing factors: perceived usefulness, perceived ease of use, perceived safety and e-commerce platform factors. This research indicates that perceived safety has the most significant influence on Vietnamese consumers' intention to purchase online on Chinese cross-border e-commerce platforms. This result also poses many problems for Vietnamese domestic businesses in exploiting the advantages that e-commerce brings and improving their competitiveness in the face of increasing competitive pressure from Chinese e-commerce platforms.

Keywords

Cross-border, e-commerce, Chinese platforms, Vietnam, online shopping, consumer behaviour

Introduction

Internet users have increased significantly from 2.95 billion to 5.56 billion in the last 10 years (from 2015 to 2025) (DataReportal, 2025; Statista, 2025). Similarly, 67.9% of the global population actively use the internet, while 63.9% engage with

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social media platforms. Hence, the internet environment plays an essential role as a platform for shifting the traditional market to a digital era. In addition, boosting internet technology opens a new online shopping source by quickly accessing information (Alharthey, 2020; Ramus & Asger Nielsen, 2005). To take advantage of e-commerce's benefits and improve their competitiveness, businesses are trying to evaluate customers' needs (Alharthey, 2020). As a result, businesses can help improve their performance efficiency and competitiveness when doing business online.

Furthermore, e-commerce plays an essential role in our daily lives. In which cross-border e-commerce has provided customers unprecedented access to products and services worldwide, especially on Chinese cross-border e-commerce platforms. China leads the Asia-Pacific market with technologically advanced platforms such as AliExpress and Temu, driving cross-border purchasing in neighbouring countries. Chinese e-commerce platforms bring various products at competitive prices, making them immensely attractive to other countries, including Vietnam. In addition, Vietnam is a neighbouring country of China, with growing bilateral trade, which is also a factor that promotes cross-border online shopping on Chinese platforms to become increasingly popular among Vietnamese consumers. For emerging economies like Vietnam, cross-border e-commerce platforms not only expand consumer choice but also introduce complex behavioural dynamics shaped by technology acceptance, perceived risks and digital trust. Therefore, determining the factors affecting Vietnamese customers' cross-border shopping intentions on Chinese e-commerce platforms will bring many scientific and practical meanings.

Literature Review

Background

Theory of Planned Behaviour (TPB)

Regarding the TPB, the intention to perform a behaviour is formed by the interaction between personal beliefs, attitudes towards the behaviour and intentions to perform that behaviour. TPB is also applied to understand and predict how individuals are likely to act in specific contexts and environments. According to Ajzen (1991), two key elements of this theory are behavioural intentions and perceived control over actions. It was also recognised as an extension of the Theory of Reasoned Action (TRA). Subjective norms, attitudes and perceived behavioural control are the primary factors that influence customer decision-making. Accordingly, this theory is valuable for understanding consumer purchasing behaviour. For example, when customers intend to buy online for an electronic or technology device, they often focus on the product's usefulness, ease of use and recommendations or feedback from friends or colleagues.

Technology Acceptance Model (TAM)

The TAM has discovered important factors, including perceived ease of use (PEOU) and perceived usefulness (PU), which impact users' acceptance of the new technology (Davis, 1985). Moreover, Ajzen and Fishbein (1977) defined

these terms as the level of a person's belief that using a specific system is free of effort and the level of a person using a particular system to enhance their performance, respectively. In another way, the former one believes that a given application is practical or not, but they do not need as much effort as the others. In contrast, the latter is that people intending to use a new application/technology may help their jobs better Davis et.al., 1989. Furthermore, the development of TRA enhances the TAM. This model describes the components commonly accepted by computers. Many customers, especially young people, like to purchase online due to its convenience and simplicity in recent years (Feng & Ivanov, 2023; Nyrhinen et al., 2024; Ruiz-Herrera et al., 2023). Therefore, many manufacturers have used this model to enhance and optimise online shopping platforms for businesses in order to meet customers' satisfaction, trust and frequency of purchases through understanding consumer adoption patterns.

Unified Theory of Acceptance and Use of Technology (UTAUT)

The UTAUT was a framework to explain and predict the acceptance of technology established by Venkatesh et al. (2003). This model indicated that the actual use of technology is based on behavioural intentions and is influenced by four major key factors: performance expectancy, effort expectancy, social influence and facilitating conditions (Marikyan & Papagiannidis, 2025; Wang et al., 2022). Furthermore, several factors (age, gender, experience and voluntariness of use) can influence these four major key factors differently (Venkatesh et al., 2003). Moreover, several extended researchers, such as Im et al. (2011), Riffai et al. (2012), Al-Gahtani et al. (2007) and Rençber (2020), introduced new contextual and moderating variables. In the actual context of the rapid development of technology, many prominent online markets such as Amazon, eBay, AliExpress and the like integrated elements of the UTAUT model into their e-commerce platforms in many aspects; for instance, choosing better products for marketing, making easy-to-use interfaces, putting user reviews and ratings, and improving secure transactions and delivery services. Hence, clients are familiar with new technologies and are willing to shop online frequently.

Stimulus-Organism-Response (S-O-R) Model

The S-O-R is a theoretical framework for investigating external factors simulating user behaviour response based on three essential elements: stimulus, organism and response (Huang, 2023; Jacoby, 2002). This framework can combine with other models, namely TPB, TAM and TRA, to predict individual user behaviour responses. Moreover, this framework can be applied to e-commerce (Lin et al., 2021), online shopping (Gong et al., 2023) and other aspects. For example, when a Vietnamese customer uses a Chinese e-commerce platform to purchase high-tech electronics. Suppose the website's interface-friendly design (stimulus) creates good emotions and feelings of trust (organism), as well as promotional offers or positive reviews from other clients (stimuli). In that case, they can quickly purchase them (response). By applying this model in the context, enterprises can better understand how external stimuli in an e-commerce environment, like website design, product offers, positive reviews and the like, can impact customers' purchasing decisions on Chinese e-commerce platforms.

Cross-border Online Shopping: An Emerging Trend

Cross-border online shopping or e-commerce has significantly altered the global trading method between enterprises and consumers (Pinson, 2025). E-commerce allows enterprises to sell their products and services both domestically and internationally. Cross-border e-commerce can develop in countries and regions with similar geographical and cultural characteristics. Cross-border e-commerce breaks traditional trading barriers between nations. It enhances world trade by creating a good place for merchants and customers to participate in global business-to-business and business-to-customers (Chen et al., 2022). Cross-border e-commerce platforms bring many benefits to businesses, such as reduced transaction costs, enhanced employee skills, improved consumer rights protection and the reinforcement of foreign trade service infrastructure (Liu, 2023). However, it also has disadvantages, such as network security, logistics costs, imbalance of export product structure (Liu, 2023), payment method, exchange rates and legal regulations (Channelengine, 2025).

China is a global leader in e-commerce in terms of technological innovation and volume. Indeed, China's cross-border e-commerce trade volume was approximately $170.95 billion in the first half of 2024 (Calviño, 2024). In addition, according to Cross-border Commerce Europe (2024), AliExpress is the top global cross-border marketplace operating in Europe, with 90% of third-party sellers in China. Moreover, the promotion of technology adoption and the development of e-commerce platforms have helped China reshape the cross-border e-commerce landscape. This process results from the strong growth of Chinese cross-border e-commerce platforms (e.g., AliExpress, Temu and Shein). With technological advantages and low-cost products, Chinese cross-border e-commerce platforms are increasingly expanding their global markets and meeting the needs of consumers around the world (Hurricane, 2024). The global cross-border B2C e-commerce market is expected to reach $7.9 trillion by 2030 (Globe Newswire, 2023).

Factors Influencing Cross-border Online Shopping Intentions

Key factors influence cross-border e-commerce, such as PU, perceived safety (PS), PEOU and e-commerce platform factors (ECOM), especially in customers' purchase decisions. The authors aim to understand how these factors affect Vietnamese customers' desire to engage in cross-border e-commerce in the Chinese platform market.

Perceived Usefulness

In the TAM theory, PU and PEOU are the essential keys that significantly impact how consumers behave and use the product (Pratista & Marsasi, 2023). PU reflects the perception of the usefulness of new technology, that through the application of new technology, individuals can improve performance and achieve set goals (Wei et al., 2018). In other words, according to Wang et al. (2020), PU has a significant impact on the user's intentions to use digital technologies. This

factor is critical in cross-border e-commerce because it can build customer trust in the value of products on the e-commerce platform and encourage them to make international transactions based on reliable websites with various payment methods, designed products and efficient customer service.

Perceived Ease of Use

Likewise, PEOU is one of the important factors in the TAM theory. Moreover, this factor and PU formed the customers' attitude towards using the computer system; however, this factor directly impacted PU but not vice versa (Henderson & Divett, 2003). In addition, in cross-border e-commerce, PEOU is related to an effective way of purchasing a product, including technology, price, quantity, quality and the like (Durgabhavani & Krishnan, 2019). For instance, according to Renny et al. (2013), customers were positive when they felt comfortable with online ticket services like faster ticket search engines, low effort and low cost. Customers will purchase airline tickets using online services.

Perceived Safety

On e-commerce platforms, anyone could be a potential trader, buyer or seller, and they can swap their roles; as a consequence, it creates broader awareness related to fraud, illicit trade, data privacy, secure payments, regulations and the like (World Customs Organization, 2022). Furthermore, consumers will face many risks, such as poor-quality products, payment issues, customs procedures, slow delivery and information security when they make transactions on cross-border e-commerce platforms (Jing & Yang, 2022). Hence, PS is an essential factor that directly influences a customer's decision to purchase on cross-border e-commerce platforms. When shoppers use an e-commerce platform, they worry about their data being compromised due to a strange international platform. Therefore, when customers feel comfortable and safe on an e-commerce platform with high levels of security (e.g., encryption, secure payment methods, GDPR standards and two-factor authentication), they are more confident to purchase on that platform. For example, Amazon, eBay, Wish and AliExpress have products with safety guidelines in place and force sellers to follow local laws and safety standards to enhance product safety (SPEAC, 2020).

E-commerce Platform Factors

By doing business on e-commerce platforms, entrepreneurs can establish, manage and grow their businesses effectively, as well as customers who have many options and can purchase domestic and international products. Several factors influence the success of cross-border e-commerce, such as scalability and flexibility, user-friendly interface, mobile responsiveness, payment gateway integration, SEO-friendly features, integration with third-party apps and services (Erik & Giri, 2021), customer support and security, reviews and reputation, and the like (Yellowbrick, 2023). On the one hand, these factors help raise PU, PEOU and PS of e-commerce platforms. On the other hand, they better meet customer needs and improve the operational efficiency of online businesses (Wei et.al., 2018).

The Aim of the Study

This article focuses on determining the key factors influencing Vietnamese consumers' intentions to shop on Chinese cross-border e-commerce platforms, focusing on PU, PEOU, PS and e-commerce platform. It applies integrated theoretical frameworks (TAM, UTAUT, S-O-R) to explain consumer behaviour and provide practical insights for businesses and policymakers.

Methodology

The authors used quantitative research methods to evaluate the influence of factors on Vietnamese consumers' intentions to shop on Chinese cross-border e-commerce platforms. Based on the above fundamental theories, this article identifies four factors affecting the online shopping intention of Vietnamese consumers on Chinese cross-border e-commerce platforms: PU, PEOU, PS and ECOM.

To collect research data, the authors constructed a survey with a five-point Likert scale to examine online shopping behaviour and the factors influencing the online shopping intentions of Vietnamese consumers on Chinese cross-border e-commerce platforms. The research team conducted an online survey via Google Forms to collect data. As cross-border e-commerce is not yet popular among all consumers in Vietnam, this survey focuses only on Hanoi City, where the level of e-commerce usage and cross-border e-commerce is high. In addition, the subjects of this survey mainly focused on university students and office staff because they are two groups with high e-commerce usage levels and familiarity with Chinese platforms. They represent young urban consumers with higher technological access, making the research results representative and applicable. However, future research should be expanded to include other consumer groups and regions to increase generalisability.

The completed questionnaire was sent to 500 consumers in Hanoi from December 2024 to February 2025. After the data were cleaned, 441 respondents' data were analysed by SPSS 26 software (Table 1).

Table 1. Variables Description.

Variable	Code	Obs.	Mean	Std Deviation	Min	Max
Perceived usefulness	PU	441	3.61	0.930	1	5
Perception of ease of use	PEOU	441	3.72	0.928	1	5
Perceived safety	PS	441	3.07	1.062	1	5
E-commerce platform factors	ECOM	441	3.46	0.978	1	5
Purchase intention on Chinese e-commerce platforms	PICE	441	3.44	0.829	1	5

Table 2. Characteristics of Survey Participants.

Characteristics	Quantity	Percentage (%)
Gender		
Male	129	29.3
Female	312	70.7
Age		
18–25 years old	306	69.4
25–35 years old	57	12.9
35–50 years old	69	15.6
>50 years old	9	2
Occupation		
Student	213	48.3
Office staff	228	51.7
Average income per month		
<5 million VND	218	49.4
5–10 million VND	86	19.5
10–20 million VND	72	16.3
20–30 million VND	26	5.9
>30 million VND	39	8.8

Research Results

Sample Characteristics

Table 2 shows that among the 441 participants, 312 were female (70.7%) and 129 were male (29.3%). This shows that female consumers are more interested in shopping on cross-border e-commerce platforms than men. Regarding age, the majority of respondents—306 individuals, or roughly 70%—were between 18 and 25 years old. This shows that cross-border e-commerce platforms are becoming increasingly familiar to young Vietnamese consumers, as they can easily access new technologies and are willing to explore new technologies such as e-commerce platforms.

Regarding occupation, survey respondents were divided relatively evenly between students (48.3%) and office workers (51.7%). However, nearly half of the respondents (49.4%) had a monthly income of less than 5 million VND. This shows that Vietnamese consumers' purchase intention is greatly influenced by the products' price on Chinese cross-border e-commerce platforms. Besides, with the diversity and convenience, Chinese cross-border e-commerce platforms easily attract low-income consumers compared to Vietnamese e-commerce platforms.

Testing the Reliability of Scales

The Cronbach's alpha test results, as presented in Table 3, indicate that all measurement scales exhibit satisfactory internal consistency ($\alpha > 0.7$). Therefore, the factor scales influencing the purchase intention of Vietnamese consumers on Chinese e-commerce platforms meet the criteria for exploratory factor analysis (EFA).

Table 3. Cronbach's Alpha Test.

Determinants	No. of Items	Cronbach's Alpha
Perceived usefulness (PU)	3	0.778
Perceived ease of use (PEOU)	3	0.762
Perceived safety (PS)	3	0.767
E-commerce platform factors (ECOM)	4	0.817
Purchase intention on Chinese cross-border e-commerce platforms (PICE)	3	0.775

Table 4. Results of Exploratory Factor Analysis and Evaluation of the Reliability of the Scale.

	Component			
	1	2	3	4
ECOM5	0.820			
ECOM4	0.786			
ECOM1	0.782			
ECOM2	0.712			
PU3		0.827		
PU2		0.820		
PU1		0.804		
PEOU1			0.815	
PEOU2			0.800	
PEOU3			0.780	
PS3				0.808
PS1				0.788
PS2				0.786

Source: Results of data analysis through SPSS 26 of the authors.

Exploratory Factor Analysis

Regarding the independent variable, Table 4 indicates a Kaiser–Meyer–Olkin (KMO) value of 0.808, surpassing the commonly accepted threshold of 0.6. This result suggests that the data are appropriate for implementing EFA. Furthermore, Bartlett's test of Sphericity produced a significance value of Sig. = 0.00 (<0.05), rejecting the null hypothesis (H_0) of no correlation among variables and confirming the appropriateness of the data and the extracted factors.

After the first EFA, the observed ECOM3 with a loading factor of less than 0.5 was excluded from the model. The authors conducted a second-factor analysis with 13 indicators in the research model, showing four groups of factors extracted from the 14 indicators (Table 4). The data processing result for the value of eigenvalues = 1.306 > 1; therefore, the number of factors extracted is appropriate.

Table 5. Pearson Correlation Analysis Results.

Pearson Correlation						
Variables		PICE	PU	PEOU	PS	ECOM
Pearson correlation	PICE	1	0.522**	0.403**	0.733**	0.379**
	PU	0.522**	1	0.322**	0.238**	0.135**
	PEOU	0.403**	0.322**	1	0.306**	0.238**
	PS	0.733**	0.238**	0.306**	1	0.390**
	ECOM	0.379**	0.135**	0.238**	0.390**	1
Sig.	PICE		0.000	0.000	0.000	0.000
	PU	0.000		0.000	0.000	0.004
	PEOU	0.000	0.000		0.000	0.000
	PS	0.000	0.000	0.000		0.000
	ECOM	0.000	0.004	0.000	0.000	
N	PICE	441	441	441	441	441
	PU	441	441	441	441	441
	PEOU	441	441	441	441	441
	PS	441	441	441	441	441
	ECOM	441	441	441	441	441

Source: Results of data analysis through SPSS 26 of the authors.

Notes: **Significant at the 0.01 level (two-tailed). ECOM: E-commerce platform factors; PEOU: Perceived ease of use; PICE: Purchase intention on Chinese cross-border e-commerce platforms; PS: Perceived safety; PU: Perceived usefulness.

Data processing results show an eigenvalue of 1.306, which exceeds the threshold of 1, confirming that the number of extracted factors is appropriate. The factor analysis shows that total variance explained is 67.227% > 50%. This means that the extracted factors explain 67.227% of the observed variables included in the EFA.

For the dependent variable, the EFA results indicated that KMO = 0.698 > 0.5 and Sig. (Bartlett's test) = 0.000 < 0.05. This indicates that the observed variables in the EFA are correlated.

Correlation Analysis

Table 5 presents correlations between the variables, with the strongest correlation between PS and purchase intention of Vietnamese consumers on Chinese cross-border e-commerce platforms (PICE).

Regression Analysis

After removing unsuitable observations through Cronbach's alpha testing and EFA, regression analysis was conducted to evaluate the factors influencing Vietnamese consumers' purchase intentions on Chinese cross-border e-commerce platforms. With an adjusted R^2 of 0.677 (Table 6), the analysis of variance

Table 6. Regressions.

$R = 0.825$, $R^2 = 0.680$, Adjusted $R^2 = 0.677$
Durbin Watson (d) = 1.917, $F = 34231.999$

Model		Unstandardised Coefficients		Standardised Coefficients	*T*	Sig.	Collinearity Statistics	
		B	Std Error	Beta			Tolerance	VIF
1	(Constant)	0.350	0.127		2.758	0.006		
	PU	0.333	0.028	0.340	11.758	0.000	0.875	1.143
	PEOU	0.090	0.029	0.093	3.113	0.002	0.827	1.210
	PS	0.483	0.025	0.593	19.387	0.000	0.784	1.276
	ECOM	0.072	0.026	0.080	2.707	0.007	0.833	1.201

Source: Results of data analysis through SPSS 26 of the authors.

Notes: Dependent Variable: Purchase intention on Chinese cross-border e-commerce platforms (PICE). Predictors: (Constant), Perceived usefulness (PU), Perceived ease of use (PEOU), Perceived safety (PS), E-commerce platform factors (ECOM). VIF: Variance inflation factor.

(ANOVA) results indicated an F-value of 231.999, statistically significant at $p < .05$, presenting a robust association between the independent and dependent variables. The Durbin–Watson value is 1.917, ranging from 1.5 to 2.5, so the regression results do not have first-order serial autocorrelation. This confirms the reliability of the research model.

Table 6 clearly demonstrates that among the key factors, PS has the strongest impact on Vietnamese consumers' purchase intention on Chinese cross-border e-commerce platforms ($\beta = 0.593$, $p < .001$). This highlights consumers' concerns when shopping on cross-border e-commerce platforms in emerging markets like Vietnam, that safety and security must be top priority. Vietnamese consumers also expressed concerns about product authenticity, payment security and seller reputation when engaging in cross-border online transactions. Due to the many issues related to fraud and account and personal data theft, safety is a major factor influencing consumers' purchase intentions (Yi & Moon, 2024). Vietnam has an incomplete legal system related to consumers, especially online transactions. Vietnamese consumers typically depend on word-of-mouth recommendations, social media reviews and buyer-protection policies to mitigate transaction-related risks. Therefore, to effectively exploit the Vietnamese e-commerce market, cross-border e-commerce platforms, as well as domestic e-commerce platforms, need to implement solutions to improve transaction safety and consumer protection policies. In addition, relying on an informal assessment mechanism reflects Vietnamese consumers' lack of trust in official protection mechanisms and state management agencies regarding e-commerce. For Vietnamese state management agencies, it is necessary to have a legal framework to protect consumers who buy goods across borders, control the quality of goods on e-commerce platforms and create trust in the market.

Moreover, these findings may add evidence to the S-O-R model. In the case of e-commerce, security-related features of e-commerce platforms are extrinsic factors that can stimulate consumers' emotions and cognitions. This once again confirms that Vietnamese consumers put safety first when shopping online on cross-border e-commerce platforms.

PU is the second most important factor influencing Vietnamese consumers' intention to shop on Chinese cross-border e-commerce platforms. This result shows that Vietnamese consumers highly value Chinese cross-border e-commerce platforms' benefits, such as product diversity, competitive prices and fast delivery. On the other hand, this also shows that Vietnamese consumers' behaviour and perception are quite pragmatic when shopping on e-commerce platforms. This result is similar to the TAM, highlighting that higher perceptions of benefits and usefulness strongly correlate with consumer intentions and behaviour. In addition, the current trend is that Vietnamese consumers are increasingly actively looking for products with good deals in both price and free shipping on Chinese cross-border e-commerce platforms compared to Vietnam's e-commerce platforms. This competitive advantage comes from the fact that China's cross-border e-commerce platforms sell a wide range of products; complete, up-to-date and attractive product information and images; fast, convenient and affordable delivery services, including providing a wide range of products, providing comprehensive and up-to-date product information, as well as providing affordable, fast and convenient shipping services.

Meanwhile, PEOU and ECOM positively impact Vietnamese customers' intention to shop online on Chinese cross-border e-commerce platforms, but they have relatively minor impacts. They still meaningfully enhance the overall user experience. Vietnamese consumers, particularly younger segments such as students, prefer platforms featuring mobile-friendly interfaces, localised customer support and seamless payment integration. Consequently, Chinese cross-border e-commerce platforms that provide Vietnamese language support integrate local payment methods (e.g., MoMo and ZaloPay). The findings align with the Unified Theory of Acceptance and Use of Technology (UTAUT), which acknowledges that usability factors may interact with age, experience and context. Besides, the cooperation of Chinese cross-border e-commerce platforms with effective domestic logistics service providers (e.g., Giaohangnhanh, Giaohangtietkiem, Viettelpost) will help these platforms reach Vietnamese consumers more efficiently. In addition, recognising these demographic statistics' high level of technical literacy, Chinese e-commerce companies implemented the target marketing strategy through public social networks, customised advertising campaigns and brand positioning for young Vietnamese consumers.

Furthermore, the research results also show that the success of cross-border e-commerce platforms in accessing markets depends not only on the products but also on the localisation strategy. As Vietnamese consumers, especially young ones, become more experienced across various e-commerce platforms, their online shopping intentions go beyond tangible benefits to include expectations of customer support, data privacy and after-sales service. Therefore, in today's context of rapid technological development, e-commerce platforms' competitive advantage depends on balancing the provision of tangible and intangible benefits and the preferences and trust of local consumers.

Conclusions

This study points out that Vietnamese customers intend to purchase across the border on Chinese e-commerce platforms, which is affected by PU, PEOU, PS and ECOM. The results of this study affirm the dominant role of PS factors on consumers' online shopping intentions on cross-border e-commerce platforms. This study also highlights many problems in the Vietnamese e-commerce market in the coming time. The first is the competition and invasion of the Vietnamese e-commerce market by cross-border e-commerce platforms, such as Chinese cross-border e-commerce platforms. Second, the increasing number of consumers shopping through cross-border e-commerce platforms in China poses many challenges for e-commerce and domestic Vietnamese businesses operating on Vietnamese platforms. This is to improve the ability to meet the needs of Vietnamese consumers in terms of safety, usefulness, ease of use, ECOM, and integrating other platforms for transportation and payment conveniently and smartly. Third, this result opens up strategic adjustments for domestic and foreign e-commerce businesses when approaching consumers in emerging markets. Future research could expand to other demographic groups or regions to validate these findings further and enhance the generalisability of the results.

Authors' Contributions

Conceptualisation, Do Ta Khanh and Dang Thai Binh; methodology, Dang Thai Binh and Nguyen Manh Thang; validation, Do Ta Khanh; formal analysis, Dang Thai Binh; investigation, Nguyen Manh Thang and Cao Anh Thinh; resources, Cao Anh Thinh; data curation, Nguyen Manh Thang and Cao Anh Thinh; writing – original draft preparation, Dang Thai Binh; writing – review and editing, Do Ta Khanh and Nguyen Manh Thang; supervision, Nguyen Manh Thang; project administration, Do Ta Khanh; funding acquisition, Do Ta Khanh.

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Article

From Wheels to Wealth: A Qualitative Case Study on Grassroots Innovation and Entrepreneurial Bricolage in Sri Lanka

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Abstract

Globally, grassroots entrepreneurship is increasingly recognised for its capacity to foster innovation and resilience in resource-scarce environments. Particularly in the Global South, entrepreneurs often operate informally, drawing on local knowledge, social networks and improvisation to overcome systemic constraints. However, scholarly understanding of how these practices manifest in non-urban South Asian contexts remains limited. In Sri Lanka, such informal entrepreneurial efforts play a crucial role in bridging service gaps, particularly in rural and semi-urban areas. Despite limited institutional support, many individuals initiate ventures by creatively mobilising resources, yet their stories remain underexplored. This study investigates the case of Saranga Lakruwan, an entrepreneur from Laxapana, who transformed a modest vehicle modification project into *Ever Rich*, a growing customisation enterprise in Ginigathena. Largely self-taught, Saranga leveraged informal training, personal networks and resource bricolage to offer tailored vehicle interior modifications. Using a qualitative case study approach, data were gathered through semi-structured interviews, observations and archival materials. Thematic analysis revealed nine key themes: making do, informal skill acquisition, improvisation, bootstrapping, customer-centred innovation, grassroots design, niche market creation, social responsibility and digital visibility and grassroots marketing. The findings illustrate how entrepreneurial bricolage and grassroots innovation enable business development and community engagement in informal economies. Saranga's case contributes to broader understandings of

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how entrepreneurs in emerging markets construct economic and social value despite material constraints, offering insight into locally embedded, bottom-up innovation strategies.

Keywords

Entrepreneurship, entrepreneurial bricolage, grassroots innovation, Sri Lanka, micro-enterprises, vehicle customisation, resource mobilisation, social value creation

Introduction

Entrepreneurship plays a central role in economic and social development, particularly in developing countries where formal employment opportunities remain limited. It is increasingly recognised that not all entrepreneurs follow formal, well-resourced or high-tech pathways to success. Instead, many individuals in constrained environments adopt creative, hands-on approaches that rely on available resources, local knowledge and incremental innovation. This phenomenon is captured by the concept of entrepreneurial bricolage, which refers to 'making do by applying combinations of the resources at hand to new problems and opportunities' (Baker & Nelson, 2005, p. 333).

Bricolage emphasises improvisation, adaptability and learning-by-doing—qualities often found in informal or grassroots entrepreneurial contexts. It is especially relevant in countries like Sri Lanka, where systemic barriers such as capital shortages, regulatory limitations and infrastructure gaps hinder the emergence of conventional start-ups (World Bank, 2020). Entrepreneurs operating in such environments must innovate not through formal R&D but by creatively repurposing and recombining tools, knowledge and relationships to deliver value.

Innovation, in this context, goes beyond high-tech or scientific breakthroughs. As Dhewantara and Surya (2021) argue, innovation at the grassroots level often emerges from the bottom-up, driven by necessity, localised knowledge and experimentation. In Sri Lanka, grassroots innovation manifests across sectors such as agriculture, handicrafts and micro-industries. Yet, these innovations are often invisible to national innovation systems, which continue to prioritise technology-based or export-oriented entrepreneurship (Wijesinghe & Perera, 2020). The disconnect between informal innovation practices and institutional support mechanisms contributes to what can be identified as a performance gap in the national entrepreneurship ecosystem.

This performance gap is particularly visible in sectors like informal transport customisation, where entrepreneurs add value through vehicle modifications and personalised services. While these micro-enterprises generate employment, attract demand and stimulate local supply chains, they remain largely unsupported in policy and unrecognised in innovation indices (Cooper et al., 2020). The lack of incubators, financial mechanisms or skills training tailored to such contexts limits the scalability and sustainability of these ventures. Therefore, bridging this performance gap requires a better understanding of how entrepreneurs innovate within limitations and how their practices can inform inclusive economic development strategies.

The present study investigates the entrepreneurial journey of Saranga Lakruwan, a young innovator from the Nuwara Eliya District, who transformed a single rented

vehicle into a thriving automotive customisation enterprise, *Ever Rich*. Operating from an informal, self-taught background, he began by modifying a three-wheeler using skills learned through certificate programmes and school-based experimentation. Over time, he expanded his services to cars, vans and eventually buses, creating a niche market for customised interior solutions, including lighting, entertainment systems and structural modifications. His innovations were not driven by access to technology or capital but by bricolage, leveraging whatever tools, skills and materials were at his disposal to meet evolving customer needs.

This case thus fills an empirical gap in existing Sri Lankan entrepreneurship literature, which has largely focused on formal small and medium-sized enterprises (SMEs), urban start-ups and export-oriented businesses (Wickramasinghe & Wimalaratana, 2016). There is limited qualitative evidence on how grassroots entrepreneurs initiate and scale businesses using informal knowledge systems and resource-constrained innovation strategies. Moreover, from a theoretical perspective, most Sri Lankan entrepreneurship studies adopt opportunity-based or resource-based views (Alvarez & Barney, 2007), with insufficient attention to the mechanisms of improvisation, bricolage and effectuation in local enterprise development.

By applying the lens of entrepreneurial bricolage and grassroots innovation, this study seeks to understand how creative resource use, local demand recognition and informal learning pathways shape entrepreneurial outcomes. It explores the transformation of an individual idea into a sustainable enterprise and its implications for supporting innovation in under-represented entrepreneurial contexts.

Research Objectives

1. To explore how entrepreneurial bricolage practices have been applied by a grassroots innovator to initiate and grow a vehicle customisation business in Sri Lanka.
2. To examine how informal skills, resource improvisation and localised innovation contribute to the development and differentiation of entrepreneurial services in a resource-constrained environment.

Case Study: From Wheels to Wealth—The Story of Saranga Lakruwan

In the misty hills of Laxapana, nestled deep within the central highlands of Sri Lanka, the story of Saranga Lakruwan begins, not with riches or formal opportunity, but with a spark of curiosity, a pair of skilled hands and an old three-wheeler. Born in 1992 into a humble family in the Nuwara Eliya District, Saranga's early life was shaped by economic hardship but also by a nurturing environment of creativity, perseverance and integrity. His father, a simple man with a rented vehicle, became both provider and quiet role model, instilling in Saranga a work ethic that would one day lay the foundation for a unique entrepreneurial journey.

Educated at Laxapana College, Saranga stood out not for his grades alone but for his ability to apply theory to practice. Whether repairing tools or experimenting

with electrical wiring at school, he developed a hands-on relationship with the material world. Though financial constraints limited access to higher education, Saranga did not stop learning. He pursued several vocational and technical certificate courses after his school years, seeking knowledge not for the sake of credentials but for practical empowerment.

The turning point came when his father allowed him to rent and operate the family's old three-wheeler. What began as a means to earn a modest income quickly evolved into a creative endeavour. Drawing from his technical training and innate aesthetic sense, Saranga began customising the three-wheeler. He installed a stylish lighting system, upgraded the sound setup, crafted a sleek cabin design and turned a basic vehicle into a moving expression of innovation. It was an act of bricolage, combining available resources, repurposed materials and self-taught skills to create something entirely new.

This small transformation did not go unnoticed. Villagers began approaching him, requesting similar modifications for their own three-wheelers. Sensing demand, Saranga began offering vehicle customisation services to others in his community at affordable rates. What started with three-wheelers soon expanded to cars and vans. Without a formal workshop or large budget, he continued working from home—cutting wires, adjusting panels, fitting lights—all with precision, patience and ingenuity. His innovation grew alongside his reputation.

The home workshop, however, could no longer accommodate the growing stream of clients. Recognising the need for space and visibility, Saranga made a bold move to Ginigathena, near Nawalapitiya, where he opened his own vehicle modification shop, *Ever Rich*. It was more than just a name; it was a declaration of vision. The new location offered adequate parking space and facilities to modify up to three buses at a time. Saranga hired three workers and began scaling his operations to serve a wider clientele.

The shop quickly became known as a hub of interior vehicle innovation. From ambient lighting systems, high-performance sound installations and digital displays to customised fans, floor lighting and wall textures, *Ever Rich* became a one-stop solution for creative modifications. Saranga sourced parts affordably, adapted existing tools for new uses and learned on the job—hallmarks of entrepreneurial bricolage. His ability to deliver tailor-made services based on customer budgets and preferences set him apart in a highly informal market.

In an area where few believed in the market potential for vehicle customisation, Saranga not only identified a gap but built an entire service model around it. Today, modifying a single bus can earn him up to 1.5 million rupees. He sells vehicle accessories, provides advisory services to clients and continues to lead every project with hands-on involvement. His shop is the only one in the region offering such specialised services, a testament to his vision and resilience (Figure 1).

Saranga's journey is not just about mechanical skills, it is a story of innovation born from scarcity. Without start-up capital, formal business education or institutional support, he created value through passion, learning and adaptability. He exemplifies the performance potential hidden within Sri Lanka's informal sector and highlights the critical performance gap between entrepreneurial creativity on the ground and the support available through national policy frameworks.

Figure 1. Innovations of *Ever Rich*.

Source: Business's Official Facebook Page – Ever Rich (2024).

Figure 2. Logo and Themes of *Ever Rich*.

Source: Business's Official Tiktok Page – Ever Rich (2024).

Entrepreneurs like Saranga often operate in isolation from mainstream development discourse, yet they innovate, employ others and meet real market needs (Figure 2).

This case illustrates how grassroots innovation, when powered by bricolage, can drive enterprise development in unexpected ways. Saranga's success lies in his ability to 'make do' with what he had and elevate it with vision. He did not wait for the perfect opportunity, he built it, wire by wire, light by light, one modified vehicle at a time. His story is a powerful reminder that entrepreneurship is not only about solving problems but about reimagining possibilities with what is already at hand.

Today, Saranga continues to innovate, expanding his services and training others. His legacy is not just a shop filled with lights and sound systems, it is a living example of how creativity, grit and grassroots ingenuity can build wealth from wheels.

Research Methodology

This study adopted a qualitative case study approach to explore how entrepreneurial bricolage and grassroots innovation shape the formation and growth of a vehicle customisation enterprise in Sri Lanka. Focusing on the lived experience of

Saranga Lakruwan, the founder of *Ever Rich*, the research aimed to understand how an entrepreneur operating in a resource-constrained, informal environment creatively mobilised local knowledge, materials and market insights to build a successful enterprise. Given the exploratory nature of the inquiry and the focus on context-specific, in-depth understanding, an interpretivist case study design was selected.

The single embedded case was chosen through purposive sampling, based on its richness in entrepreneurial bricolage practices and the unique trajectory of the entrepreneur. Saranga's journey from a village-based, self-taught technician to a regionally recognised customiser of vehicle interiors offered a compelling context to examine how innovation emerges in informal and low-capital settings. The case is particularly relevant for understanding bottom-up entrepreneurial processes and how individuals construct new business models through experiential learning, improvisation and demand-driven adaptation (Table 1).

Data were collected using multiple qualitative methods to ensure triangulation and credibility. Primary data were obtained through semi-structured interviews with Saranga, his three employees, two family members and four long-term clients who have had their vehicles modified at *Ever Rich*. These interviews were conducted in Sinhala, digitally recorded, transcribed and translated into English for analysis. The interview protocol was designed to elicit insights into Saranga's motivations, resource use, decision-making processes, innovation practices and customer engagement strategies.

Secondary data included direct observations at the workshop in Ginigathena, where the researcher documented the physical setting, types of modification tools, work practices and client interactions. Photographs of modified vehicles, the shop layout and customisation components (such as lighting systems, sound setups and interior features) were also collected. Archival materials such as marketing content, Facebook posts, digital design catalogues and certificates from training programmes were reviewed to contextualise the entrepreneur's skills and public image.

Table 1. Profile of the Respondent in This Study.

Respondent's Name	Relationship to the Entrepreneur	Age (Years)	Living Area
Saranga Lakruwan	Male entrepreneur in this study	33	Laxapana
Jayathissa	Father	67	Laxapana
Asanga	Brother	40	Hatton
Sajan	Employee	26	Nawalapitiya
Nadith	Customer	35	Ginigathena
Sathiir	Customer	30	Ulapane
Lasanthi	Customer	38	Nawalapitiya
Geethika	Customer	24	Gampola

The collected data were analysed through thematic analysis, following Braun and Clarke's (2006) framework. Themes were iteratively refined, compared across data sources and organised into analytical categories that answered the study's research objectives.

The study upheld ethical research standards, including informed consent, voluntary participation and confidentiality of all participants. Pseudonyms were used where appropriate. The researcher maintained reflexive field notes to ensure positionality awareness and minimise interpretation bias.

This methodology aligns with qualitative case study guidelines advocated by Yin (2014) and Creswell (2013), which emphasise in-depth, real-world exploration of a bounded system. It is particularly suited for capturing the complexity of entrepreneurial bricolage, where linear or quantitative frameworks may fail to reflect the dynamic, iterative and experiential nature of resource mobilisation and innovation in the informal economy.

Sample Profile

Results and Discussions

This section presents the thematic analysis of the qualitative data gathered from the case study of *Ever Rich*, aligned with the research objectives. Thematic analysis enabled the identification of patterns and meanings within the narrative, offering rich insights into the entrepreneurial journey of Saranga Lakruwan. The themes were derived from an in-depth reading of the case and reflect core aspects of entrepreneurial bricolage and social value creation.

Research objective 1: To explore how entrepreneurial bricolage practices have been applied by a grassroots innovator to initiate and grow a vehicle customisation business in Sri Lanka.

1. *Making do' with available resources*

Saranga Lakruwan's entrepreneurial journey began with a humble mindset of 'making do' with limited resources. His ability to creatively use whatever was available—basic tools, recycled materials and personal skills—allowed him to start customising vehicle interiors right from home. This behaviour echoes Baker and Nelson's (2005) concept of bricolage, where resource constraints inspire inventive reuse. Saranga described this early phase: 'I had no fancy tools, but I focused on fixing and decorating three-wheelers using what I had sometimes just old wiring or cheap lights. It was important to make the best of little things'.

His father Jayathissa reflected on this resourcefulness: 'Even though we had little money, Saranga's hands could turn old parts into something valuable. That was the start of his success'.

This pragmatic approach to resource mobilisation is crucial in informal economies and highlights how grassroots entrepreneurs circumvent formal capital barriers (Baker & Nelson, 2005).

2. *Skill acquisition through informal learning*

Unlike entrepreneurs who rely heavily on formal education, Saranga's skills were forged through a combination of school education, practical certificate courses and experiential learning. This blend of formal and informal knowledge enabled him to build competence in wiring, sound systems and vehicle decoration. His employee Sajan emphasised this skill depth: 'Saranga's knowledge comes from both training and hands-on work. He knows exactly how to fix problems and improve designs'.

Such continuous skill-building is vital for bricolage, where entrepreneurs recombine knowledge and practices gained from diverse sources (Fisher, 2012). It also empowers entrepreneurs to adapt swiftly to emerging challenges and customer needs.

3. *Improvisation and creative problem-solving*

Creativity in problem-solving stands at the core of Saranga's business model. Faced with unavailable parts or unique client requests, he improvises with alternatives, an essential trait of bricolage entrepreneurship (Garud & Karnøe, 2003). Customer Sathiir praised this flexibility: 'When I asked for a special sound and light setup, some parts weren't in stock, but Saranga found clever alternatives that worked perfectly'.

This adaptability illustrates how entrepreneurs turn constraints into opportunities, tailoring solutions that large firms or formal industries might overlook.

4. *Bootstrapping and incremental growth*

Saranga's growth strategy was characterised by bootstrapping, reinvesting profits to scale gradually from home-based work to a formal workshop. This incremental path reflects findings from Greve and Salaff (2003), who note that small-scale entrepreneurs rely on careful, stepwise growth in resource-poor settings. Employee Sajan shared: 'We started in a small space, but as demand increased, Saranga invested in a bigger workshop and hired staff. He never borrowed from banks but grew slowly with what he earned' (Figure 3).

This demonstrates a sustainable growth model rooted in pragmatic financial management and gradual capacity building.

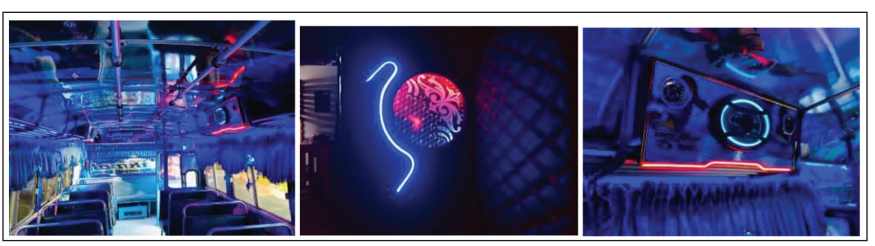

Figure 3. Entrepreneur's Works.

Source: Business's Official Tiktok Page – Ever Rich (2024).

Research objective 2: To examine how informal skills, resource improvisation and localised innovation contributed to the development and differentiation of entrepreneurial services in a resource-constrained environment.

1. *Customer-centred customisation*

A distinguishing feature of Saranga's venture is the close relationship with customers. He customises modifications based on individual budgets, vehicle types and preferences, reflecting a user-driven innovation process (von Hippel, 2005). Lasanthi, a private bus owner, explained: 'Saranga customizes my buses according to route needs and passenger comfort, always adjusting based on what I can afford'.

This approach strengthens client loyalty and distinguishes Ever Rich from generic vehicle workshops, illustrating how grassroots entrepreneurs tailor offerings to local demand.

2. *Grassroots innovation in product design*

Saranga's innovations, from lighting systems to fan placements and sound enhancements, are contextually embedded and arise from his understanding of local needs. Nadith, a fellow entrepreneur and customer, emphasised the uniqueness: 'Saranga combines style with affordability, creating designs that look modern but fit local budgets' (Figure 4).

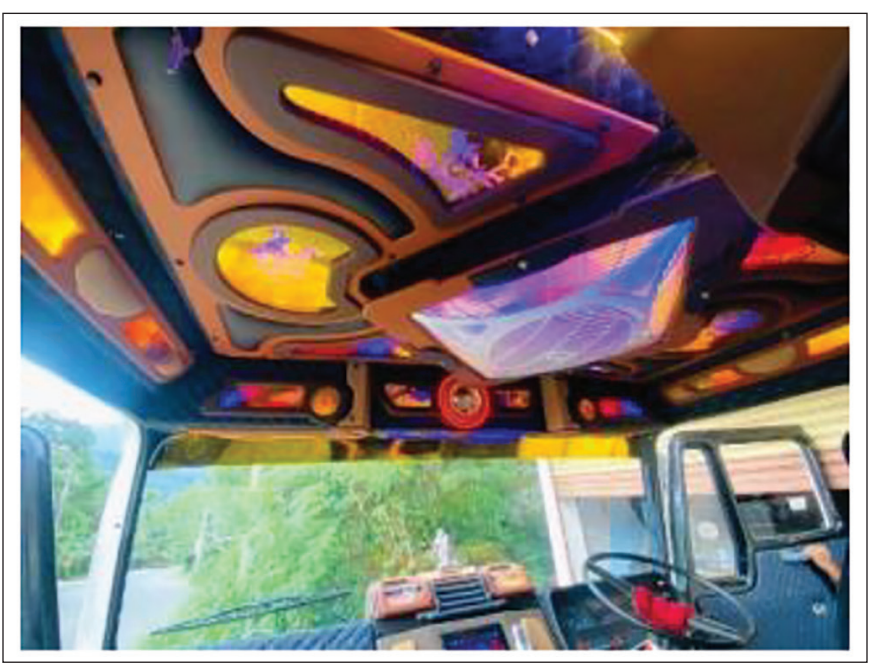

Figure 4. Customised Products.

Source: Business's Official Facebook Page – Ever Rich (2024).

This localised innovation is critical for informal sectors where imported or mass-market solutions do not fully meet customer expectations (Seyfang & Smith, 2007).

3. *Market niche creation in informal contexts*

In a region with no other vehicle interior customisation shops, Saranga identified and exploited a market niche. Customer Sathiir remarked: 'Here, no one else does what Saranga does. If you want your vehicle personalized, you come to him'.

This ability to create and dominate a niche aligns with entrepreneurial theories on opportunity recognition in informal markets (Greve & Salaff, 2003). It highlights how grassroots entrepreneurs fill service gaps through innovation and local knowledge.

4. *Reputation, trust and social responsibility*

Beyond business, Saranga is deeply engaged in social welfare, which enhances his community standing. He organises free Vesak Dansals, distributes Poson festival stickers, and supports religious events like illuminating the Sumana Saman Devalaya (Figure 5). This community embeddedness fosters goodwill, a key asset for informal entrepreneurs (Seyfang & Smith, 2007). Employee Sajan noted: 'Saranga is more than a boss, he cares about the community and supports us and the village. That makes working here special'.

Figure 5. Lighting of the Sumana Saman Devalaya in Ginigathena.

Source: Business's Official Facebook Page – Ever Rich (2024).

Figure 6. Vesak Dansel.

Source: Business's Official Facebook Page – Ever Rich (2024).

This blend of entrepreneurship and social responsibility strengthens Ever Rich's legitimacy and contributes to sustained customer loyalty (Figure 6).

5. *Digital visibility and grassroots marketing*

In the absence of formal advertising channels or corporate marketing budgets, Saranga leveraged social media platforms such as Facebook and TikTok to build his brand and connect with a wider audience. His online presence acts as a dynamic showcase of his work, highlighting customised interiors, lighting systems, sound installations and ongoing projects, which organically attract both local and regional customers.

Unlike traditional businesses, Saranga's strategy focuses on visual storytelling and customer engagement, using video snippets, before-and-after shots and customer testimonials to build trust and social proof. This grassroots marketing approach resonates with research suggesting that digital platforms can amplify the reach of informal entrepreneurs and help them construct legitimacy in saturated or informal markets (Cooper et al., 2020; von Hippel, 2005).

One of his customers, Geethika, a fellow entrepreneur, remarked: 'I first saw Saranga's bus modification on TikTok. His design sense is clean, bold, and different. That's when I contacted him, and since then I've always collaborated with him on vehicle projects'.

Through consistent social media use, Saranga has transformed digital platforms into affordable marketing tools, creating demand and expanding his reputation far beyond his physical locality. His case highlights how informal entrepreneurs integrate digital technologies with grassroots practices to scale their ventures and engage new markets (Figure 7).

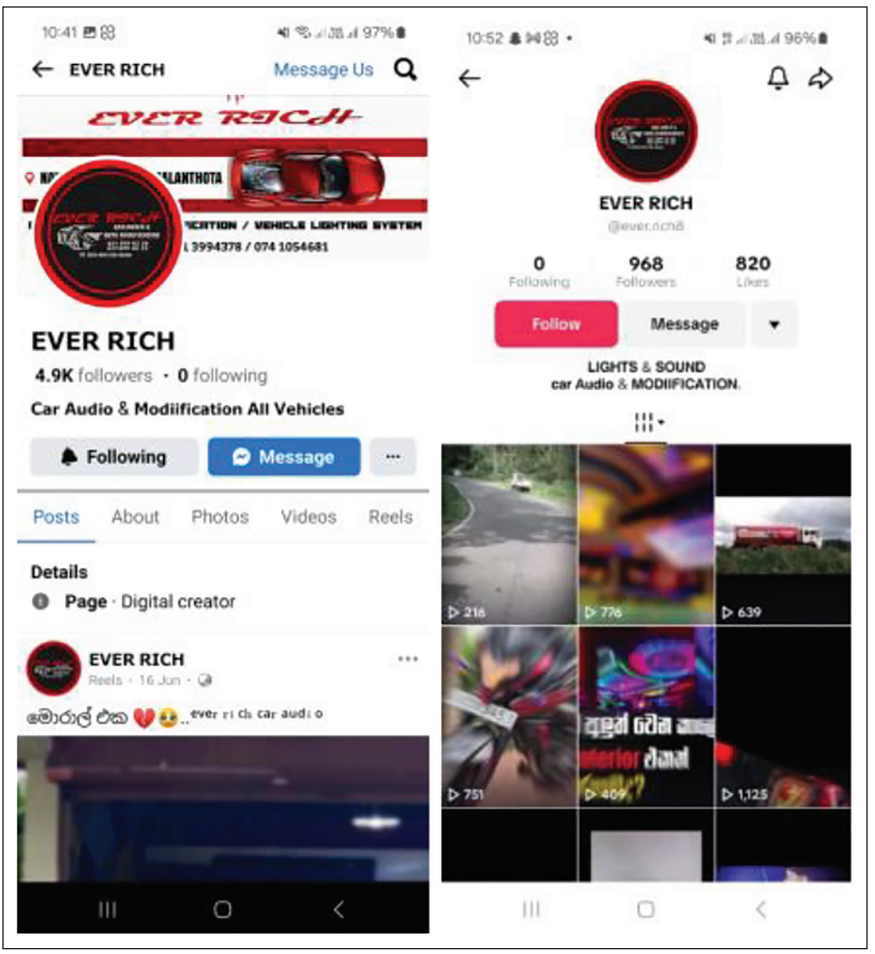

Figure 7. Social Media Platforms.

Source: Business's official social media platforms.

Conclusion

The story of Saranga Lakruwan and the rise of *Ever Rich* serves as a compelling case of how entrepreneurial bricolage and grassroots innovation can drive business creation and growth in resource-constrained environments. Through the lens of this qualitative case study, it becomes clear that Saranga's success is not rooted in access to capital or advanced infrastructure, but in his capacity to improvise, recombine resources and innovate based on local needs, all core elements of the bricolage approach as outlined by Baker and Nelson (2005).

Themes such as 'making do' with available tools, bootstrapping and informal learning were foundational in explaining how Saranga initiated his enterprise from home with minimal input. His capacity to transform a basic 'veel' into a well-decorated, technically enhanced vehicle using only local materials reflects

the essence of bricolage, creatively constructing value from 'what is at hand' (Baker & Nelson, 2005; Garud & Karnøe, 2003).

As the business matured, Saranga's attention to customer-centred customisation and user-led innovation played a vital role in distinguishing his services. Modifications tailored to individual budgets and preferences, particularly for customers like Lasanthi, a bus fleet owner, and Nadith, a fellow entrepreneur, underscore how grassroots innovators like Saranga bridge market gaps left by formal industry players (Seyfang & Smith, 2007; von Hippel, 2005). His offerings, ranging from lighting systems to digital displays, demonstrate how user-driven feedback loops fuel iterative innovation and customer loyalty in informal economies.

Furthermore, the theme of market niche creation illustrates that Saranga successfully filled a void in the Ginigathena–Nawalapitiya region by offering vehicle interior modifications, an underserved service in the area. His ability to scale gradually, moving from home-based operations to a three-bus-capacity workshop with three employees, illustrates the power of incremental growth rooted in self-financing and demand responsiveness (Greve & Salaff, 2003).

Importantly, the study finds that entrepreneurial success in informal contexts is not solely economic. Saranga's commitment to social value creation, through Vesak Dansals, Poson sticker giveaways, and religious contributions like illuminating the Sumana Saman Devalaya, exemplifies community-embedded entrepreneurship. These efforts generate reputational capital, enhance trust and consolidate his legitimacy as a local leader (Aldrich & Zimmer, 1986). Additionally, he uses social media platforms to market his services.

In sum, Saranga Lakruwan's journey highlights how informal entrepreneurs, particularly in under-resourced rural settings, rely on personal resourcefulness, adaptive strategies and community engagement to achieve meaningful growth. His case affirms the relevance of bricolage theory in emerging economies and adds to the growing body of literature that sees informal, bottom-up innovation not as a survival tactic, but as a deliberate, strategic practice with transformative potential (Fisher, 2012; Seyfang & Smith, 2007).

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Article

Service Spectrum: Exploring South Asia's Trade Trends and Composition

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Abstract

This article examines the trends and composition of services trade within South Asia, a region with substantial potential yet lagging behind its global counterparts. The study highlights the increasing importance of the services sector globally, with its share in world gross domestic product (GDP) rising to 65.7% by 2020, and its contribution to employment reaching 51% of the global workforce. South Asia, comprising eight countries, demonstrates diverse patterns in services trade, with India leading as a major player, contributing 3.77% to the global services trade in 2021. The analysis reveals variations in service distribution across nations and over time, with significant portions of manufacturing services in India and Bhutan, transport services dominating in Nepal and Pakistan, and travel services prevalent in Bhutan and the Maldives. Also, financial services are notable in Afghanistan and Bhutan, while Pakistan excels in insurance and pension services. Despite the challenges, including negative growth during economic downturns and the COVID-19 pandemic, South Asia has witnessed steady growth in the services trade, led by India and the Maldives. This study shows the region's growing integration into the global service economy and its evolving trade dynamics.

Keywords

South Asia, services trade, growth rate, import composition, export composition

Background

Services play a crucial role in shaping a country's economic scenario, enhancing the efficiency of various industries and the nation as a whole. Key services such as transportation, telecommunications and financial services influence the movement

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of people, goods, services and capital across borders (Maurer et al., 2008). After experiencing a decline in its contribution to global gross domestic product (GDP) in terms of value added in 2011, the services sector has seen significant growth. By 2020, its share of the global GDP reached approximately 65.7%. Also, the global trade in services, as a percentage of world GDP, has more than doubled from 6% to 13.6% between 1990 and 2019. The rapid expansion of the services sector has also increased its capacity to absorb labour. According to data from the International Labour Organization (ILO) via ILOSTAT, around 51% of the global workforce is employed in the services sector. This data reveals a substantial rise of about 17% in the share of global employment in services from 1991 to 2019.

The services sector is dominating the global economy in the present era. International trade and investment in services is gaining importance in the global platform. In the year 2020, the share of the services sector value added in the world GDP was around 65.3% (Organisation for Economic Co-operation and Development (OECD) National Accounts Database). In the case of India, the services sector has also received the highest foreign direct investment (FDI) during 2021 (Paul & Nayak, 2024). As part of the Uruguay Round Commitments in the World Trade Organization (WTO) in the 1990s, over the last two to three decades, many countries have liberalised and integrated into the global market and expanded their services trade dimension; also, their participation in regional trade agreements (RTAs) increased dramatically in the 2000s. Earlier, due to the non-storability and simultaneity of production and consumption nature, the services were considered to be non-tradable. It is only after the Uruguay Round of the WTO General Agreement on Trade in Services (GATS) in 1994 that trade in services has come into the focus of mainstream economists. The momentum for incorporating services into RTAs gained traction when the services dimension was included in the North American Free Trade Area (NAFTA) in 1994 (Paul & Nayak, 2025a).

For the last three decades, the trade in services has been becoming an attractive matter of discussion among researchers. Due to some reasons, such as the faster growth of services trade in comparison to merchandise trade and the continuously increasing share of the services sector in GDP and employment, the studies on trade in services have gained significant importance. The United Nations Conference on Trade and Development (UNCTAD) data indicate that the value of world export of goods has increased at a compound annual growth rate (CAGR) of 22.93%, as against the world services export, which has grown at a CAGR of 23.67% during the period from 2005 to 2021. Also, the share of the services sector in world GDP has increased from 55.4% to 63.9% in 2021 (according to World Bank national accounts).

South Asia consists of eight countries: Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan and Sri Lanka. In terms of the value of total services trade, India is the leading member country among all the South Asian Association for Regional Co-operation (SAARC) members, with a total services trade (services import + services export) of around $436,613 million (in 2021), which is around 3.77% of the total world services trade (which is $11,591,791 million in 2021). It is an important region having a lot of potential in services

trade lagged behind the global economy. Therefore, looking at the rising importance of the services sector in the field of trade, employment and growth of the nation, in this article, the trend of services export, services export composition and direction of the services trade of South Asian countries are analysed.

Review of Literature

A vast body of theoretical literature explores the differences between trade in services and trade in goods. One key distinction is that, unlike goods, services cannot be stored. As a result, their production and consumption occur simultaneously, requiring both producers and consumers to be present in the same location at the same time (Hill, 1977).

In this regard, Deardorf (1985) argued that the application of the traditional theory of revealed comparative advantage is, therefore, not applicable to trade in services, or it needs some modifications. Further, Mirza and Nicoletti (2004) stated that due to the feature of joint production and consumption, inputs from exporters and importers will be required to trade a service.

Another branch of authors has focused on the similarities that exist between the trade in goods and trade in services. Hindley and Smith (1984) argued that there is no difference in the theoretical approach to the study of trade in goods and trade in services. Further, Bhagwati et al. (2004) pointed out that the gains from trade in services can be understood using the theoretical framework used for gains from trade in goods. Markusen (1989) stated that producer services have similar characteristics, such as differentiated products and scale economies, to goods and services. Indeed, Markusen employed the same monopolistic competition model to examine trade in both producer services and manufactured intermediate goods.

Over the past decade, empirical research on services trade has expanded significantly. However, unlike the trade-in-goods literature, which benefits from detailed micro-level data, these studies primarily rely on country-level or aggregate industry-level data on services trade (e.g., Freund & Weinhold, 2002; Head et al., 2009; Kimura & Lee, 2006; Paul & Nayak, 2025b). Interestingly, the findings of these studies often mirror those in goods trade research. For instance, both Kimura and Lee (2006) and Head et al. (2009) apply similar specifications to analyse goods and services trade, revealing comparable trade elasticities. Also, they highlighted that common factors in gravity models of goods trade—such as a shared language or colonial history—also play a significant role in facilitating services trade.

These reviews of literature highlight that there are very limited studies on the modelling issues of services trade. Further, most of the studies are centred on the definitional issues of services trade and the measurement of services trade. Since a low pool of data is available on trade in services, it is difficult to conduct a micro-level study encompassing the disaggregated level of services. This study is done with the objective of highlighting some stylised facts on the trend and composition of the services trade of the South Asian countries.

Methodology

Data

In this study, the OECD–WTO Balanced Trade in Services (BaTIS) data set has been used. This data set covers three main variables, that is, reported value (reported by the reporting country), reported value including estimates (in addition to the reported values, any adjustments were made to ensure internal consistency, as well as the estimations made by the OECD–WTO to fill in the gaps in the reported information), and final balanced value (it is the reconciled bilateral trade flow, where exports equal mirror imports). For the analysis of the trend and composition of services trade flows, the data on *reported value*, *including estimates*, have been used; while for the direction of services trade of South Asian countries, the data on *final balanced value* have been used. The OECD–WTO BaTIS data set has been used because of its two advantages, that is, (a) it is complete and consistent, and (b) it is balanced in the sense that the asymmetries between reported and mirror flows, exports and imports, are reconciled by calculating a symmetry-index weighted average between the two. Since the final balanced values are estimated in nature, this data are used for bilateral analysis. This study is done for the period from 2005 to 2021.

Tool for Trend Analysis

For trend analysis, the annual growth rate (AGR) and CAGR are calculated. Moreover, the linear regression analysis is used to determine the changing trend of the export services, import services and total trade in services.

The CAGR is determined using the following formula (Formula 1).

$$\text{CAGR} = \left[\left(\frac{\text{FINAL}}{\text{BEGIN}} \right)^{\frac{1}{n}} - 1 \right] \times 100 \tag{1}$$

Note: FINAL is the final value, BEGIN is the end value, and n is the number of periods.

Tools for Analysing Structural Change in Composition of Services Trade

Services exports, imports and total trade for different services are given a rank (the category of service having the highest share in the total services exports was given rank 1 and so on) for the initial period (2005) and the end period (2021) (Except Afghanistan, 2008–2020 and Bhutan, 2006–2020). The Spearman rank correlation coefficient (Spearman, 1904) has been calculated using Formula 2. A significant positive correlation will indicate that there is no significant change in the composition of services exported to India during the study period. On the other hand, an insignificant positive correlation will indicate that there is a significant change in the composition of services exported to India.

$$Rank\ Correlation\ Coefficient\ (\rho) = 1 - 6\left[\frac{\sum_{i=1}^{n} D_i^2 \sum \frac{1}{12}(m_k^3 - m_k)}{n(n^2 - 1)}\right] \quad (2)$$

Note: D^2 is the square of rank differences. m_k is the number of items obtaining the same rank. And n is the number of observations.

The Spearman's rank correlation coefficient will help in knowing if there has been any change in the composition of services exports, imports and total trade of South Asian countries during the period from 2005 to 2021.

Results and Discussion

Trend of Services Export of South Asia

The trend of South Asian services exports, with and without Afghanistan, is shown in Table 1 for the years 2002–2021. The data show that global service exports have increased significantly over time, going from $1,632.34 billion in 2002 to $6,033.03 billion in 2021. Service exports from South Asian countries have increased significantly during this time, with and without Afghanistan. South Asian exports have climbed from $24.71 billion in 2002 to $261.63 billion in 2021 without taking Afghanistan into account. South Asian exports, including Afghanistan, varied from $24.71 billion in 2002 to $261.63 billion in 2021.

Based on an analysis of growth rates, the South Asian countries have experienced a remarkable change in their service exports, with an average CAGR of 13.22% when Afghanistan is included, and 5.28% when it is not. This growth is faster than the average growth rate for services exports globally, which were 2.01% and 7.12%, respectively.

The percentage of South Asian Free Trade Area (SAFTA) exports to global exports is also shown in Table 1. South Asia's proportion of global exports has risen over time, suggesting an expanding footprint in the services sector. For example, in 2002, South Asia's exports without Afghanistan made up 1.51% of global exports; by 2021, that percentage had increased to 4.34%. Similarly, South Asian exports rose from 1.51% of global exports in 2002 to 4.34% in 2021, including Afghanistan.

In summary, the world export of services has increased by more than 3.5-fold from $1,632 billion in 2002 to $6,033 billion in 2021. The CAGR of the world services export growth for the period from 2002 to 2021 is more than 23.14%. But, in the case of South Asian (without Afghanistan) exports, the CAGR is more than 28%. Further, the share of South Asian exports in total world exports has increased tremendously during the study period (2002–2021). During 2002, the share of services exports of South Asia as a whole was just 1.51% of world exports, which increased to 3.30% in 2009 and to 4.34% in 2021. The share declined from 2.89% in 2008 to 2.82% in 2009, but again jumped back to 3.30% in 2010. This is the biggest-ever change in the share of the services exports of

Table 1. Trend of Services Export of South Asia.

	With Afghanistan				Without Afghanistan			
Year	World Export (USD Billion)	Export of SAFTA (USD Billion)	SAFTA Export Growth (%)	SAFTA Export as a % of World	World Export (USD Billion)	Export of SAFTA (USD Billion)	SAFTA Export Growth (%)	SAFTA Export as a % of World
2002*	1,632.34	–	–	–	1,632.34	24.71	–	1.51
2003*	1,894.50	–	–	–	1,894.50	30.12	21.86	1.59
2004*	2,299.53	–	–	–	2,299.53	44.64	48.21	1.94
2005	2,653.64	–	–	–	2,653.64	59.74	33.84	2.25
2006	3,030.68	–	–	–	3,030.68	77.18	29.20	2.55
2007	3,629.82	–	–	–	3,629.82	96.24	24.68	2.65
2008	4,074.92	119.10	–	2.92	4,074.92	117.81	22.42	2.89
2009	3,653.40	104.94	−11.89	2.87	3,653.40	103.05	−12.53	2.82
2010	3,972.72	134.26	27.94	3.38	3,972.72	131.12	27.25	3.30
2011	4,468.06	155.62	15.90	3.48	4,468.06	152.14	16.03	3.41
2012	4,595.00	164.87	5.94	3.59	4,595.00	161.81	6.35	3.52
2013	4,882.50	166.54	1.01	3.41	4,882.50	165.66	2.38	3.39
2014	5,240.72	177.61	6.65	3.39	5,240.72	176.26	6.40	3.36
2015	5,004.68	177.10	−0.28	3.54	5,004.68	176.27	0.001	3.52
2016	5,084.42	182.46	3.02	3.59	5,084.42	181.94	3.22	3.58
2017	5,532.02	208.34	14.19	3.77	5,532.02	207.97	14.31	3.76
2018	6,095.94	230.62	10.69	3.78	6,095.94	229.88	10.53	3.77
2019	6,279.02	240.14	4.13	3.82	6,279.02	239.48	4.18	3.81
2020	5,171.70	220.84	−8.04	4.27	5,171.70	220.14	−8.08	4.26
2021	6,033.03	262.41	18.83	4.35	6,033.03	261.63	18.85	4.34
CGAR (%)	3.06	6.26	–	–	7.12	13.22	–	–

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: Shaded parts represent the unavailability of data. *International Trade Centre (ITC) Trade Map. SAFTA: South Asian Free Trade Area.

South Asia, followed by the period of COVID-19 in 2020. During this period, the share of services exports by South Asia has increased to 4.35% in 2021 from 3.81% in 2019.

Trend of Services Import of South Asia

Table 2 presents data with and without Afghanistan's inclusion, illustrating the trend of services imports within South Asia from 2002 to 2021. The data are

separated into two sections: one with import figures from Afghanistan and the other without.

The overall amount of services imported into the world has been steadily rising over time, a sign of the services' increasing importance in international trade. The import data within South Asia also show an increasing trend, though with some fluctuations. The SAARC bloc's (together with South Asian countries) import values show significant growth rates, particularly from 2008 onward, indicating a rise in regional co-operation and trade.

Table 2. Trend of Services Import of South Asia.

	With Afghanistan				Without Afghanistan			
Year	World Import (USD Billion)	Import of SAFTA (USD Billion)	SAFTA Import Growth (%)	SAFTA Import as a % of World	World Import (USD Billion)	Import of SAFTA (USD Billion)	SAFTA Import Growth (%)	SAFTA Import as a % of World
2002*	1,618.77	–	–	–	1,618.77	26.68	–	1.65
2003*	1,856.83	–	–	–	1,856.83	32.06	20.16	1.73
2004*	2,209.99	–	–	–	2,209.99	45.46	41.81	2.06
2005	2,603.45	–	–	–	2,603.45	60.66	33.45	2.33
2006	2,955.28	–	–	–	2,955.28	73.56	21.25	2.49
2007	3,495.38	–	–	–	3,495.38	87.24	18.60	2.50
2008	3,959.44	108.13	–	2.73	3,959.44	107.38	23.09	2.71
2009	3,559.19	96.09	−11.13	2.70	3,559.19	95.26	−11.28	2.68
2010	3,872.59	133.45	38.87	3.45	3,872.59	132.20	38.77	3.41
2011	4,324.26	147.19	10.29	3.40	4,324.26	145.90	10.36	3.37
2012	4,470.22	152.27	3.46	3.41	4,470.22	150.03	2.83	3.36
2013	4,719.24	150.11	−1.42	3.18	4,719.24	148.58	−0.97	3.15
2014	5,142.09	153.94	2.56	2.99	5,142.09	152.45	2.60	2.96
2015	4,893.18	149.55	−2.86	3.06	4,893.18	148.33	−2.70	3.03
2016	4,921.82	160.90	7.59	3.27	4,921.82	159.78	7.72	3.25
2017	5,328.84	185.70	15.42	3.48	5,328.84	184.46	15.45	3.46
2018	5,803.38	208.89	12.49	3.60	5,803.38	207.52	12.50	3.58
2019	6,007.15	210.39	0.72	3.50	6,007.15	209.18	0.80	3.48
2020	4,879.95	176.64	−16.04	3.62	4,879.95	175.53	−16.08	3.60
2021	5,558.76	223.77	26.68	4.03	5,558.76	222.46	26.73	4.00
CGAR (%)	2.64	5.75	–	–	6.71	11.81	–	–

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: Shaded parts represent the unavailability of data. *International Trade Centre (ITC) Trade Map. SAFTA: South Asian Free Trade Area.

Table 2 shows the growth percentages of South Asia's imports with and without Afghanistan, throwing light on how South Asia is doing in terms of service trade. Remarkably, there have been years with negative growth rates, like those of 2009 and 2015, which could have been caused by changes in trade patterns or possible economic difficulties. The CAGRs for South Asia's imports, however, generally demonstrate encouraging patterns, underscoring the general growth of the services trade within South Asia. Further, it shows the trend of import services of South Asia compared to world imports, implying its share in the global services trade market. The data show that this percentage has fluctuated over time due to several factors, including changes in policy, the state of the economy, and the dynamics of external trade. The general trend of Table 3 points to a growing degree of regional integration and collaboration among countries, as evidenced by the positive trajectory of services trade within South Asia. However, obstacles like negative growth rates in some years and insufficient data in Afghanistan draw attention to the subtleties and complexity of the regional trade environment.

In short, the world import of services has increased by more than 3.4-fold from $1,618.77 billion in 2002 to $5,558.76 billion in 2021. The CAGR of the world services imports for the period from 2002 to 2021 is more than 22%. But, in the case of South Asia (without Afghanistan) imports, the CAGR is more than 27.67%. The share of South Asian imports in total world imports has increased tremendously during the study period (2002–2021). During 2002, the share of services imports of South Asia as a whole was just 1.65% of the world's exports, which increased to 2.68% in 2009 and to 4% in 2021.

Percentage Share of South Asian Countries in South Asian Trade

The percentage share of each nation in the total South Asian trade, broken down by exports and imports, is shown in Table 3 from 2002 to 2021. Based on the data, it is clear that India has maintained a significant share of both imports and exports over the years, maintaining its dominant position in South Asian trade. India plays a major role in regional trade flows because of its sizeable economy and varied industrial base. Though the share of Pakistan is smaller than that of India, it is remarkable, indicating the importance of Pakistan as another important South Asian economy.

Another important participant in South Asian trade is Bangladesh, which has been gradually gaining ground over time, especially in exports. Bangladesh's growing influence in regional trade is driven by the growth in communications and professional services (Kathuria & Malouch, 2016). The degree to which Nepal, Sri Lanka and the Maldives participate in South Asian trade varies as well; these countries' contributions are a reflection of their unique trade and economic policies. Despite fluctuations over time, Nepal's share in South Asian trade remains modest, given the country's landlocked status and infrastructure and connectivity challenges. Despite having a lower share of South Asian trade due to its reliance on tourism and fishing, the Maldives nevertheless contributes to the dynamics of the region as a whole.

Table 3. Percentage Share of Countries in Total South Asian Trade.

	Afghanistan		Bhutan		Bangladesh		India		Maldives		Nepal		Pakistan		Sri Lanka	
Year	X	M	X	M	X	M	X	M	X	M	X	M	X	M	X	M
2002*	–	–	0.09	0.22	3.43	5.27	78.81	78.86	1.47	0.42	1.23	0.89	9.83	8.40	5.13	5.94
2003*	–	–	0.07	0.34	3.36	5.34	79.36	77.61	1.43	0.38	1.24	0.83	9.86	10.28	4.68	5.24
2004*	–	–	0.06	0.23	2.43	4.25	85.76	78.40	1.14	0.35	1.03	0.85	6.16	11.73	3.42	4.20
2005	–	–	0.07	0.21	2.09	3.64	87.93	77.95	0.54	0.35	0.64	0.72	6.16	12.38	2.58	4.76
2006	–	–	0.07	0.08	1.73	3.18	90.34	79.80	0.72	0.31	0.50	0.67	4.54	11.44	2.11	4.51
2007	–	–	0.06	0.07	1.68	3.31	90.33	81.16	1.64	0.38	0.53	0.83	3.91	10.11	1.84	4.15
2008	1.08	0.70	0.05	0.09	1.68	3.39	89.95	81.70	1.38	0.40	0.61	0.79	3.58	8.99	1.68	3.96
2009	1.80	0.86	0.05	0.10	1.90	3.53	88.51	83.83	1.47	0.41	0.67	0.88	3.78	6.80	1.80	3.58
2010	2.34	0.94	0.05	0.10	1.82	3.29	87.19	86.12	1.35	0.34	0.50	0.65	4.91	5.32	1.84	3.24
2011	2.23	0.88	0.05	0.12	1.58	3.58	89.02	85.12	1.35	0.39	0.55	0.53	3.24	5.41	1.98	3.97
2012	1.85	1.47	0.06	0.13	1.63	3.66	88.27	85.32	1.32	0.37	0.56	0.59	4.00	5.53	2.30	2.93
2013	0.53	1.02	0.07	0.12	1.80	4.38	89.57	84.53	1.55	0.46	0.71	0.66	2.96	5.30	2.81	3.53
2014	0.76	0.97	0.07	0.12	1.76	5.05	88.51	83.38	1.69	0.52	0.78	0.78	3.28	5.50	3.16	3.68
2015	0.47	0.81	0.07	0.13	1.83	5.16	88.24	82.63	1.64	0.59	0.81	0.80	3.33	5.89	3.61	3.99
2016	0.29	0.69	0.08	0.13	1.94	4.85	88.69	82.99	1.58	0.69	0.74	0.78	2.77	6.03	3.91	3.84
2017	0.18	0.67	0.08	0.11	1.86	4.58	88.94	83.25	1.44	0.69	0.77	0.87	3.04	6.32	3.71	3.51
2018	0.32	0.65	0.08	0.11	2.36	4.60	88.87	84.28	1.41	0.64	0.76	0.85	2.57	5.59	3.63	3.27
2019	0.27	0.58	0.07	0.10	2.59	4.54	89.43	85.28	1.41	0.64	0.67	0.82	2.44	4.89	3.11	3.15
2020	0.32	0.63	0.06	0.13	2.73	4.49	91.99	87.04	0.69	0.42	0.40	0.62	2.44	4.52	1.37	2.16
2021	0.30	0.58	0.03	0.10	2.86	4.89	91.99	88.09	1.40	0.50	0.29	0.69	2.48	4.41	0.95	1.33

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: 1. X represent export. 2. M represents import. 3. Shaded parts represent the unavailability of data. *International Trade Centre (ITC) Trade Map.

Compared to other countries, the contribution of Bhutan to South Asian trade is negligible, which is indicative of its smaller economy and narrow export base, which is mainly concentrated in agricultural and hydropower goods. Table 3 represents the percentage share of different member countries of South Asian in the total trade of South Asia. Looking at the data, it can be said that India is the largest contributor to the total export and total import of South Asia. India's share in the total services exports of South Asia has increased from 78.81% in 2002 to above 90% in 2007; however, this has declined to 89.95% in 2008 and continued to fall till 2010 (87.19%). However, this has increased to around 92% in 2021.

A similar pattern is seen in the case of service imports during the period from 2002 to 2021. Here also, among all South Asian members, India is the major importer of services. From a 78.86% share in 2002, it has increased to more than 88% in 2021. After India, Bangladesh has a share of around 2.86%, followed by Pakistan with 2.48%, and the Maldives with 1.40% in total South Asian imports of services in recent times (2021). In the case of imports also, Bangladesh is having the second-highest share in services imports with 4.89%, followed by Pakistan with 4.41%, in total South Asian imports in 2021. Maldives's share in total South Asian imports is much less, around 0.50%.

A significant change in the share of imports and exports of services for Sri Lanka is observed from 2019 to 2021. Sri Lanka had a comparatively good share of around 3.11% in South Asian exports in the year 2019, which has declined to 1.37% in 2020 and 0.95% in 2021. This may be because Sri Lanka is a country dependent on the tourism sector, the sector which was severely affected in 2020 due to COVID-19. Thus, the share in total exports of services has fallen.

Growth of Services Export and Import of South Asian Countries

Tables 4 and 5 provide insights into the growth of service exports and imports among South Asian nations over time, highlighting distinct patterns across the regions. Table 4 tracks the yearly increase in service exports for each South Asian member, as well as the global total, showing changes in export volumes relative to the previous year. The data reveal a consistent upward trend in service exports, with notable year-on-year growth fluctuations reflecting varying economic conditions and trade dynamics within the region. Complementing this, Table 5 details the CAGR of service exports from 2008 to 2020, alongside the AGRs of service imports from 2009 to 2020.

There are discernible patterns in the export of services amongst South Asian nations from 2003 to 2021. Despite small fluctuations, India's service exports have grown consistently and significantly, with an average CAGR of 14.15% from 2002 to 2021. India's impressive track record of growing service exports over the years makes it stand out in the South Asian region. CAGR of 14.15% from 2002 to 2021 on average, the service sector in India has been a major contributor to the country's economic growth. India's proficiency in several service sectors, including software development, financial services, business process outsourcing, and information technology (IT), is demonstrated by this steady growth.

Table 4. Growth of Export of Services of South Asian Countries (Per Cent).

Year	Afghanistan	Bhutan	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka	World
2002*	–	–	–	–	–	–	–	–	–
2003*	–	−9.37	19.21	22.71	19.02	21.91	22.19	11.23	16.06
2004*	–	35.16	7.05	60.16	17.53	23.86	−7.38	8.22	21.38
2005	–	54.04	15.33	37.22	−36.37	−17.55	33.79	0.88	15.40
2006	–	21.75	6.79	32.75	70.90	1.58	−4.68	5.52	14.21
2007	–	16.44	21.22	24.66	185.69	32.38	7.44	9.23	19.77
2008	–	−9.21	23.44	23.24	3.87	41.68	13.18	12.79	12.26
2009	46.69	2.43	0.01	−13.29	−5.79	−2.62	−6.94	−5.49	−10.34
2010	65.80	23.21	22.49	26.03	17.29	−4.82	66.07	30.76	8.74
2011	10.70	18.84	0.33	18.33	15.92	28.61	−23.58	24.66	12.47
2012	−12.08	24.39	9.54	5.05	3.53	7.18	31.08	23.22	2.84
2013	−71.30	20.59	11.54	2.50	18.65	28.43	−25.33	23.29	6.26
2014	53.25	0.81	4.54	5.38	16.34	16.92	18.04	19.64	7.34
2015	−37.57	0.81	3.19	−0.58	−3.10	2.95	1.38	14.13	−4.50
2016	−37.78	16.80	9.53	3.55	−0.48	−5.31	−14.38	11.58	1.59
2017	−29.31	10.96	9.29	14.51	3.80	17.80	25.33	8.21	8.80
2018	98.92	12.96	40.72	10.61	8.13	9.40	−6.24	8.42	10.19
2019	−11.17	−8.20	14.10	4.78	4.19	−7.45	−1.06	−10.75	3.00
2020	7.36	−19.64	−3.12	−5.41	−54.78	−45.45	−8.14	−59.39	−17.64
2021	12.17	−39.26	24.22	18.47	139.70	−12.60	20.51	−18.45	16.65
CAGR (2002–2021)	–	26.07	25.19	29.29	27.95	24.03	21.43	23.98	26.07
CAGR (2008–2021)	23.31	15.58	15.67	15.41	16.49	14.51	11.60	15.83	23.31

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: Shaded parts represent the unavailability of data. *International Trade Centre (ITC) Trade Map. CAGR: Compound annual growth rate.

Table 5. Growth of Services Import of South Asian Countries (%).

Year	Afghanistan	Bhutan	Bangladesh	India	Maldives	Nepal	Pakistan	Sri Lanka	World
2002*	–	–	–	–	–	–	–	–	–
2003*	–	80.45	21.75	18.25	8.21	12.42	46.99	5.98	14.71
2004*	–	−4.84	12.85	43.26	30.90	44.64	61.90	13.63	19.02
2005	–	24.65	14.25	32.68	35.30	12.98	40.78	51.27	17.80
2006	–	−52.31	6.06	24.13	8.45	13.33	12.11	14.90	13.51
2007	–	−6.31	23.26	20.63	43.29	46.65	4.78	9.11	18.28
2008	–	63.49	27.03	24.78	29.31	17.84	10.17	18.24	13.28
2009	10.33	6.02	−7.35	−8.82	−6.93	−1.17	−32.74	−19.57	−10.11
2010	50.20	41.41	29.28	42.67	13.32	3.33	8.64	25.63	8.81
2011	3.23	26.43	20.10	9.02	28.72	−10.11	12.15	35.00	11.66
2012	73.82	10.17	5.82	3.70	−1.72	14.58	5.71	−23.63	3.38
2013	−31.71	−9.23	17.75	−2.33	22.07	9.82	−5.51	19.05	5.57
2014	−1.96	7.34	18.30	1.16	13.77	21.65	6.45	6.80	8.96
2015	−18.88	2.63	−0.66	−3.74	10.34	0.33	4.03	5.26	−4.84
2016	−8.06	6.15	1.08	8.06	26.06	4.16	10.21	3.55	0.59
2017	10.91	1.45	8.92	15.77	15.59	29.74	20.97	5.54	8.27
2018	10.24	8.57	13.19	13.88	4.94	9.37	−0.60	4.79	8.91
2019	−11.27	−3.95	−0.63	1.91	−0.07	−3.21	−11.78	−3.10	3.51
2020	−8.90	3.20	−17.06	−14.32	−44.65	−36.15	−22.44	−42.27	−18.76
2021	18.28	−2.21	37.15	27.46	49.86	40.47	22.81	−22.72	13.91
CAGR (2002–2021)	–	29.49	29.21	28.15	20.78	24.37	24.74	24.91	29.49
CAGR (2008–2021)	22.72	13.76	16.26	15.18	16.29	14.11	10.26	12.42	22.72

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: Shaded parts represent the unavailability of data. *International Trade Centre (ITC) Trade Map. CAGR: Compound annual growth rate.

Significant growth in service exports is also shown by other nations, like Sri Lanka and Bangladesh, which had CAGRs of 7.12% and 12.13% over the same period, respectively (supported by Sadiq et al., 2023). Bangladesh's steadily increasing service exports are indicative of the nation's expanding service-oriented economy. Even with a slower growth rate than Bangladesh and India, Sri Lanka continues to have positive growth in service exports consistently. On the other hand, Afghanistan's growth in services exports fluctuated over time, showing both positive and negative growth rates. Bhutan exhibits variations as well, growing positively in some years and negatively in others.

Afghanistan's imports of services fluctuated, showing a significant increase in 2010 and subsequent declines thereafter (until 2016); however, it experienced positive growth during 2017 and 2018 and again experienced negative growth during 2019 and 2020. Bhutan has continuously shown positive growth rates, which suggests that service imports have increased steadily over time and have aided in the country's economic development. Bangladesh's growing services sector was reflected in its robust growth in services imports, especially in 2010 and 2011. Despite occasional swings, India, a significant economy in the area, has managed a comparatively stable growth in services imports.

Services imports into the Maldives were highly volatile, declining sharply in both 2013 and 2020. These fluctuations may have been caused by shifts in tourism trends or general economic conditions. Nepal's imports of services have exhibited erratic patterns, with some years seeing increases and others seeing decreases, reflecting the country's changing economic climate. Services imports into Pakistan have fluctuated, with a notable drop in 2009, possibly as a result of policy changes or economic difficulties. Sri Lanka's erratic economic performance over the period was reflected in the country's services imports, which likewise displayed mixed trends, with some years of growth and others of decline.

For every country, the CAGR from 2008 to 2020 offers a concise indicator of the general trend in services imports. Bhutan's CAGR of 7.64% was the highest during the study period, indicating consistent growth in services imports. Bangladesh's CAGR of service imports stands out to be 6.64%. Other nations, like the Maldives and India, had moderate CAGR values, indicating a slower rate of growth in the import of services.

In brief, it reveals that the Maldives has the highest CAGR of 12.87% from 2002 to 2021. After the Maldives, India has experienced the highest growth, with a CAGR of 12.46%, followed by Bangladesh (11.37%) and Nepal (10.36%). Pakistan, Bhutan and Sri Lanka have a CAGR of 8.08%, 7.13% and 3.33%, respectively. The services import data of Afghanistan are not available from 2002 to 2007 and 2021; thus, we could not fetch the CAGR for the same from 2002 through 2021. For the same period from 2002 to 2021, the CAGR of the world's services import was 6.71%.

Country-wise Share in Services Trade in World Trade

Table 6 shows the percentage of South Asian nations' global trade share from 2002 to 2021, broken down by imports (M) and exports (X). Afghanistan, Bhutan, Bangladesh, India, the Maldives, Nepal, Pakistan and Sri Lanka are among the nations that are represented.

India has steadily held a major portion of the global trade over the years. India's import share was slightly higher at 1.30% in 2002 than its export share of 1.19%. India's export and import shares grew over the ensuing years, indicating the country's expanding involvement in international trade. India's import share was 2.90% in 2011, while its export share had increased to 3.10%. Bangladesh's trade shares also showed a discernible increase over time. Bangladesh's import share was 0.09% in 2002, while its export share was 0.05%. These numbers had risen to 0.12% and 0.20%, respectively, by 2011. Bangladesh's consistent increase in trade share is a sign of improving market integration.

Throughout that time, Sri Lanka's trade shares stayed largely steady. Sri Lanka's import share in 2002 was 0.10%, whereas its export share was 5.13%. Sri Lanka's export percentage steadily declined over time, hitting 0.95% in 2021. In the meantime, Sri Lanka had a trade surplus, as seen by its fluctuating but generally low import share. Compared to the other South Asian countries, Afghanistan, Bhutan, the Maldives and Nepal typically had very small shares in global trade. For the majority of the years, their trade shares have stayed below 1%, which is indicative of their smaller economies and lower levels of integration into international trade networks.

In short, with time from 2002 to 2021, the share of services exports of India has increased from 1.19% in 2002 to around 4% in 2021. Similarly, India's share in world imports has increased from 1.30% in 2002 to 3.53% in 2021. Between 2014 and 2018, Sri Lanka's share in world exports was higher than that of India, but in 2019, India surpassed Sri Lanka, and eventually, in 2020 and 2021, the share of Sri Lanka in total world services exports fell to 1.37% and 0.95%, respectively. The other countries had a consistently low share in the world services exports and were not impacted much by the global slowdown of 2008 and the COVID-19 pandemic of 2020. The import figures show that India is the leading importer of services, having a share of more than 3.50% in recent times (2021).

Composition of Services Trade of South Asia

The percentage of different services in total services exported (/imported) from (/to) Afghanistan, Bhutan, India, the Maldives, Nepal, Pakistan, Sri Lanka, and worldwide from 2005 to 2021 is shown in Tables 7 and 8. Over time, a significant shift is observed in the trend of services trade. Interestingly, there is a strong association, showing steady trends over time, between the total amount of services exported and imported. The brief country-wise analysis is presented below:

The data on services exports across South Asian countries reveal significant trends and transformations over time. India, as a leader in telecommunications, computer and information services, consistently shows a high contribution from these sectors, reflecting its global competitiveness in IT. However, sectors like transport and travel have witnessed a declining share in India's exports, indicating a shift towards more technology-driven services. Bhutan, on the other hand, showcases a starkly different profile, with travel and transport services comprising over 90% of its total services exports. This emphasises Bhutan's reliance on tourism and cross-border transport as economic pillars, while its financial services

Table 6. Share of South Asian Countries in World Services Trade (%).

	Afghanistan		Bhutan		Bangladesh		India		Maldives		Nepal		Pakistan		Sri Lanka	
Year	X	M	X	M	X	M	X	M	X	M	X	M	X	M	X	M
2002*	–	–	0.001	0.004	0.05	0.09	1.19	1.30	0.02	0.01	0.02	0.01	0.15	0.14	5.13	0.10
2003*	–	–	0.001	0.006	0.05	0.09	1.26	1.34	0.02	0.01	0.02	0.01	0.16	0.18	4.68	0.09
2004*	–	–	0.001	0.005	0.05	0.09	1.66	1.61	0.02	0.01	0.02	0.02	0.12	0.24	3.42	0.09
2005	–	–	0.002	0.005	0.05	0.08	1.98	1.82	0.01	0.01	0.01	0.02	0.14	0.29	2.58	0.11
2006	–	–	0.002	0.002	0.04	0.08	2.30	1.99	0.02	0.01	0.01	0.02	0.12	0.28	2.11	0.11
2007	–	–	0.002	0.002	0.04	0.08	2.39	2.03	0.04	0.01	0.01	0.02	0.10	0.25	1.84	0.10
2008	0.03	0.02	0.001	0.002	0.05	0.09	2.63	2.23	0.04	0.01	0.02	0.02	0.10	0.25	1.68	0.11
2009	0.05	0.02	0.002	0.003	0.05	0.10	2.54	2.26	0.04	0.01	0.02	0.02	0.11	0.18	1.80	0.10
2010	0.08	0.03	0.002	0.004	0.06	0.11	2.95	2.97	0.05	0.01	0.02	0.02	0.17	0.18	1.84	0.11
2011	0.08	0.03	0.002	0.004	0.05	0.12	3.10	2.90	0.05	0.01	0.02	0.02	0.11	0.18	1.98	0.13
2012	0.07	0.05	0.002	0.004	0.06	0.12	3.17	2.91	0.05	0.01	0.02	0.02	0.14	0.19	2.30	0.10
2013	0.02	0.03	0.003	0.004	0.06	0.14	3.06	2.69	0.05	0.01	0.02	0.02	0.10	0.17	2.81	0.11
2014	0.03	0.03	0.002	0.004	0.06	0.15	3.00	2.50	0.06	0.02	0.03	0.02	0.11	0.16	3.16	0.11
2015	0.02	0.02	0.002	0.004	0.06	0.16	3.12	2.53	0.06	0.02	0.03	0.02	0.12	0.18	3.61	0.12
2016	0.01	0.02	0.003	0.004	0.07	0.16	3.18	2.71	0.06	0.02	0.03	0.03	0.10	0.20	3.91	0.13
2017	0.01	0.02	0.003	0.004	0.07	0.16	3.35	2.90	0.05	0.02	0.03	0.03	0.11	0.22	3.71	0.12
2018	0.01	0.02	0.003	0.004	0.09	0.17	3.36	3.03	0.05	0.02	0.03	0.03	0.10	0.20	3.63	0.12
2019	0.01	0.02	0.003	0.004	0.10	0.16	3.42	2.99	0.05	0.02	0.03	0.03	0.09	0.17	3.11	0.11
2020	0.01	0.02	0.003	0.005	0.12	0.16	3.93	3.15	0.03	0.02	0.02	0.02	0.10	0.16	1.37	0.08
2021	0.01	0.02	0.001	0.004	0.12	0.20	3.99	3.53	0.06	0.02	0.01	0.03	0.11	0.18	0.95	0.05

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: 1. X represents export. 2. M represents import. 3. Shaded parts represent the unavailability of data. *International Trade Centre (ITC) Trade Map.

Table 7. Percentage Share of Various Services in Total Services Export by Countries.

BPM	Afghanistan		Bhutan		Bhutan		India		Maldives		Nepal		Pakistan		Sri Lanka		World	
Codes	2008	2020	2005	2021	2006	2020	2005	2021	2005	2021	2005	2021	2005	2021	2005	2021	2005	2021
1	NA	NA	16	7	NA	NA	0	0	NA	NA	NA	NA	NA	NA	NA	NA	2	2
2	0	0	0	0	NA	NA	0	0	NA	NA	NA	NA	0	0	NA	NA	1	1
3	11	12	8	18	25	28	13	12	7	4	9	5	29	9	44	25	22	19
4	1	9	5	4	44	62	14	4	89	95	33	15	5	9	28	20	26	10
5	45	10	1	13	NA	NA	1	1	0	0	NA	NA	0	2	2	0	2	2
6	0	0	0	0	10	1	2	1	0	0	1	2	1	1	5	1	2	3
7	8	0	1	2	0	4	2	2	NA	NA	NA	NA	1	2	0	4	8	10
8	0	0	0	0	NA	NA	0	0	2	0	NA	NA	0	0	NA	NA	5	7
9	8	8	3	8	2	1	32	34	0	1	11	16	10	38	8	48	5	15
10	23	44	14	13	0	0	35	39	NA	NA	17	54	9	23	12	1	20	26
11	0	1	0	0	NA	NA	0	1	NA	NA	NA	NA	0	0	NA	NA	1	2
12	2	15	52	35	19	1	1	0	2	0	29	8	45	16	1	1	2	1
SNI	2	1	0	0	0	3	0	6	0	0	0	0	0	0	0	0	4	2
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
ρ	*0.70***		*0.85****		*0.67*		*0.91****		*0.64*		*0.54*		*0.86****		*0.49*		*0.85****	

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: 1. *** and ** represent statistically significant at 1% and 5% level respectively. 2. ρ denotes the Spearman correlation coefficient. 3. SNI denotes service not included. 4. NA denotes services not available. Balance of payments manual (BPM) codes: 1. Manufacturing services; 2. Maintenance and repair services N.I.E.; 3. Transport services; 4. Travel services; 5. Construction services; 6. Insurance and pension services; 7. Financial services; 8. Charges for the use of intellectual property N.I.E.; 9. Telecommunications, computer and information services; 10. Other business services; 11. Personal cultural and recreational services; 12. Government goods and services N.I.E.

Table 8. Percentage Share of Various Services in Total Services Import by Countries.

BPM	Afghanistan		Bangladesh		Bhutan		India		Maldives		Nepal		Pakistan		Sri Lanka		World	
Codes	2008	2020	2005	2021	2006	2020	2005	2021	2005	2021	2005	2021	2005	2021	2005	2021	2005	2021
1	NA	NA	5.54	0	NA	NA	0	0	NA	NA	NA	NA	NA	NA	NA	NA	2	2
2	0	0	1	0	0	2	0	1	NA	NA	NA	NA	1	0	NA	NA	1	1
3	69	84	65	67	3	25	54	42	45	31	37	52	35	48	69	72	27	25
4	5	3	6	6	34	0	10	7	33	15	37	26	17	10	11	8	25	11
5	3	1	0	7	43	32	1	1	0	4	NA	NA	2	0	0	0	2	1
6	1	1	6	1	3	2	6	4	4	8	6	8	2	3	7	8	4	5
7	0	0	1	6	0	4	1	3	0	0	NA	NA	2	3	0	3	4	6
8	0	1	0	1	0	0	1	4	0	4	NA	NA	1	3	NA	NA	5	9
9	7	2	1	1	2	2	2	7	0	2	1	1	1	6	1	6	4	9
10	6	3	6	8	9	5	22	26	18	34	16	11	35	22	11	1	20	28
11	0	0	0	0	NA	NA	0	2	0	0	NA	NA	0	0	NA	NA	1	2
12	9	6	8	4	5	5	1	0	1	1	3	2	4	5	1	2	3	1
SNI	0	0	0	0	2	24	0	1	0	0	0	0	0	0	0	0	3	0
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
ρ	*0.89***		*0.39*		*0.43*		*0.91***		*0.78***		*0.94***		*0.77***		*0.78*		*0.91***	

Source: Calculated from the data of Organisation for Economic Co-operation and Development (OECD)–World Trade Organization (WTO) Balanced Trade in Services (BaTIS) data set.

Notes: 1. ***Denotes significant at a 1% level. 2. ρ denotes the Spearman correlation coefficient. 3. SNI denotes service not included. 4. NA denotes services not available for trade. Balance of payments manual (BPM) codes: 1. Manufacturing services; 2. Maintenance and repair services N.I.E.; 3. Transport services; 4. Travel services; 5. Construction services; 6. Insurance and pension services; 7. Financial services; 8. Charges for the use of intellectual property N.I.E.; 9. Telecommunications, computer and information services; 10. Other business services; 11. Personal cultural and recreational services; 12. Government goods and services N.I.E.

sector has shown significant growth recently. In the Maldives, travel services dominate, contributing over 90% of the total services exports, underscoring its heavy dependence on the tourism industry, complemented by modest contributions from transport services and emerging telecommunications exports.

Nepal and Pakistan display diversified trends in their services export mix. Nepal has experienced a surge in 'other business services', which now account for over half of its total exports, while traditional sectors like travel have seen fluctuations due to external shocks like the COVID-19 pandemic. Pakistan mirrors a similar trajectory, with notable growth in telecommunications and a declining share in government goods and transport services. Sri Lanka, like Nepal and Pakistan, exhibits a rising reliance on telecommunications and computer services, while traditional sectors like transport and travel remain significant. Afghanistan, which is constrained by limited data, reveals a transition from the construction services dominance to a growing share of 'other business services'. Across these countries, the evolving export profile indicates shifts towards specialised and technology-driven services, influenced by both global trends and domestic economic strategies.

The patterns of service imports across South Asian countries from 2005 to 2021 reveal varied and evolving trends, reflecting each country's economic priorities and dependencies. Afghanistan's reliance on transport services dominates its imports, with a consistently high share increasing to 83.8% in 2020. This highlights the critical role of transportation in its trade and logistics infrastructure. Similarly, transport services are a major focus for Bangladesh, accounting for over 65% of its imports throughout the period, while sectors like financial and other business services have seen modest growth. Bhutan's service imports also emphasise transport, but the rise in travel and telecommunications services points to shifting priorities towards tourism and technological infrastructure. For India, the growing share of computer, information and telecom services demonstrates its deepening integration into global digital networks, complementing its reliance on transport and travel services, despite these traditional categories showing a slower growth rate.

The Maldives and Nepal exhibit unique service import patterns that mirror their distinct economic structures. In the Maldives, imports of travel and telecom-related services have increased significantly, signalling a shift in consumption patterns, likely tied to its dependence on tourism and the growing importance of digital connectivity. Nepal, on the other hand, shows a broadening in its import composition, with significant increases in transport, construction, and technology-related services over time. This diversification suggests a reorientation of Nepal's economic focus, possibly towards infrastructure and technological development. Meanwhile, Pakistan's services imports highlight a decline in traditional sectors like manufacturing, with notable growth in travel, insurance, and other business services. This indicates a dynamic shift, even though the structural changes in its import pattern appear statistically insignificant over time.

Sri Lanka's services import situation shows a transition towards sectors like financial services and telecommunications, where rapid increases reflect shifting economic activity and priorities. Across the region, the positive correlations in services import patterns, though varying in significance, highlight steady trends

shaped by domestic needs and global interdependencies. Collectively, these trends not only reflect the economic transformations within individual countries but also shed light on the evolving trade dynamics that influence the broader regional landscape.

Therefore, the patterns of service exports and imports across South Asian countries reveal both commonalities and contrasts in economic priorities. Manufacturing services are significant in exports from Bhutan and India and imports by Bangladesh and India, though the shares vary over time. A minimal presence of maintenance and repair services (N.I.E.) is evident across both categories. Travel services dominate exports from Bhutan and the Maldives, reflecting tourism's reliance, while imports of these services are prominent in Nepal and the Maldives. Transport services are key to exports from Nepal and Pakistan and imports to Afghanistan, Bangladesh and Nepal, indicating logistics' importance. Construction services feature in Bhutan's exports and the Maldives' imports, while financial services are exported by Afghanistan and Bhutan and imported heavily by Afghanistan, Bangladesh and Nepal. Insurance and pension services are notable in Pakistan's exports and Bangladesh's imports. Intellectual property (IP) (N.I.E.) fees differ, with Bhutan and Sri Lanka leading in exports, while Bangladesh and Nepal dominate imports. Telecommunications, computer and information services are critical in both exports (Bhutan, Pakistan) and imports (Bangladesh, Bhutan, Sri Lanka), showcasing digital growth. Other business services are significant in exports and imports for Bangladesh, India and Pakistan. These trends highlight evolving trade dynamics and regional economic interdependencies.

Summary and Conclusion

There are various differences in the way services are distributed between the years and between the countries. Significant portions of manufacturing services are found in nations like Bhutan and India, though the percentages change over time. While transport services are notably present, particularly in Nepal and Pakistan, maintenance and repair services (N.I.E.) are minimally represented in most countries. Bhutan and the Maldives are home to a large concentration of travel services, whereas Bhutan has a larger share of construction services (Nath & Goswami, 2018; Singh & Kumar, 2014). While financial services are noteworthy in Afghanistan and Bhutan, insurance and pension services are well-represented in Pakistan. Different countries charge different amounts for the use of IP (N.I.E.), with Bhutan and Sri Lanka charging higher percentages. Information, computer and telecommunications services are widely used in Bhutan and Pakistan.

Despite the negative growth in 2009, 2020 and 2019, the overall services trade within South Asia showed an upward trend from 2002 to 2021. Sri Lanka experienced a significant decline in its share of South Asian exports, falling from 3.11% in 2019 to 0.95% in 2021, most likely as a result of its heavy reliance on tourism, which was negatively impacted by the COVID-19 pandemic. India led the South Asian countries in service export growth rates (CAGR) from 2002 to 2021, with a CAGR of 13.33%. The Maldives came in second with a CAGR of

13.93%, and Bangladesh came in third with a CAGR of 11.67%. Pakistan and Sri Lanka lagged behind the global services trade CAGR of 6.92% (supported by Agarwal, 2019; Chanda, 2010; Sadiq et al., 2023).

In the global services market, India stands out as a leader, displaying steady services export growth with an average CAGR of 14.15% from 2002 to 2021, followed by the Maldives (with a CAGR of 12.94%). Looking at the imports, the Maldives has the highest CAGR of 12.87% from 2002 to 2021. After the Maldives, India has experienced the highest growth with a CAGR of 12.46%, followed by Bangladesh (11.37%) and Nepal (10.36%).

India and Bhutan both have sizeable percentages of manufacturing services, though these figures change over time. While transport services are particularly well-developed in Nepal and Pakistan, maintenance and repair services (N.I.E.) are poorly represented in the majority of other nations. There are notable concentrations of travel services in Bhutan and the Maldives, with Bhutan having a larger stake in construction services. Afghanistan and Bhutan are important for their financial services, while Pakistan has a strong representation in insurance and pension services. Use fees for IP vary from country to country; higher fees are levied in Bhutan and Sri Lanka. In Bhutan and Pakistan, the use of computers, information and telecommunication services is widespread.

On the other hand, the distribution of imported services differs greatly between nations and years. Bangladesh and India are the two countries where manufacturing services are most common, though the percentages change over time. The majority of countries, except Nepal and the Maldives, have very little maintenance and repair services (N.I.E.). Travel services are more common in the Maldives and Nepal, whereas transport services are more common in Afghanistan, Bangladesh and Nepal. Afghanistan, Bangladesh and Nepal are important hubs for financial services, with Bangladesh and Pakistan seeing particularly strong growth in insurance and pension services. There are significant differences in IP fees; Bangladesh and Nepal typically charge more. There are significant percentages of computer, information and telecommunication services in Bangladesh, Bhutan and Sri Lanka.

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Article

Do Stock Returns Reflect the Influence of the Pandemic on Businesses? An Empirical Study from the Indian Capital Market

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Abstract

This research study aims to explore whether the impact of the pandemic on different sectors was reflected in the stock market returns or not. The study has taken eight sectors of the Indian economy and started with the assumed impact of the pandemic on those industries based on popular perceptions. Then, it validated the assumed impact with the help of the analysis of the financial statements. Once the impact has been validated with the help of the financial statements, the effect on the stock market returns has been computed by comparing the changes in the stock returns for each industry with those in the index returns from the pre-pandemic times to post-pandemic times. The study reveals that the stock returns in most of the sectors reflected the influence of the pandemic on the businesses with a few exceptions. The exceptions where the stock market returns did not reflect the influence of the pandemic have been explained with the help of the measures taken by the businesses to mitigate the effect of the pandemic or with the help of other intervening factors.

Keywords

Coronavirus pandemic, business cyclicity, equity returns, economic development, business performance

Introduction

The Covid-19 pandemic has impacted economies across the globe (Dinh & Narayan, 2020; Salisu et al., 2022). Since the advent of the pandemic was followed

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by lockdowns, it led to the recessionary phase in the business cycle of most of the nations. The recessionary phase is bound to occur as a natural phenomenon in the business cycles. However, recessions differ from each other in terms of nature, policy response and structural disruption caused. For example, COVID-19 was a biological disaster that gradually evolved into an economic crisis (Ozili, 2020) as against the subprime crisis of 2008 and the dotcom crash of 2000 which were driven by financial indiscipline (Jermann & Quadrini, 2012). In addition, COVID-19 has been claimed to be one of the most severe and dangerous crises in the history of mankind (Sukharev, 2020).

The pandemic brought a mixed bag of outcomes for the different sectors. While certain sectors have been positively impacted by the pandemic, many of the sectors have been negatively impacted. There also exist a few industries such as the fast moving consumer goods (FMCG) industry that have not witnessed any significant growth or decline with the pandemic.

It has been said that the market returns on an equity stock are a reflection of the performance of the underlying firms (Mohanram, 2005). It is expected that the firms should witness higher-than-average returns on their stocks during the positive business cycles and lower-than-average returns on their stocks during the negative business cycles. The relevance of financial reporting to the stock markets can be even more for the emerging markets than the developed economies (Mirza et al., 2019). In addition, stock markets have been proven to be a reflection of economic growth also (Hoque & Yakob, 2017).

The initial response of the overall stock markets to the pandemic was negative but short-lived (He et al., 2020). There was increased volatility in the markets globally during the initial stage of the pandemic (Mobin et al., 2022; Rakshit & Neog, 2021). Post that, the equity markets World over have witnessed a substantial rise in the overall index value, implying that there has been a positive impact of the macroeconomic factors such as easing of liquidity measures and pumping of money by the government into the economy. In such a case, it can be expected that the sectors that are positively impacted by the pandemic must witness a higher rise in their returns as compared to the rise in the returns on the market index. At the same time, the sectors that are negatively impacted by the pandemic must witness a lower rise or a fall in their returns as compared to the rise in the returns on the market index.

In addition, it has been observed that the firms that have been able to digitalise their business processes were better prepared to face the challenges posed by the pandemic (Matalamaki & Joensuu-Salo, 2021; Xu et al., 2021). So, within any sector, different firms can have been impacted in different ways by the pandemic depending on their level of agility, contingency plans, and so on. In addition, the degree of agility exhibited by a firm is dependent on the organisational systems (Mandal & Dubey, 2021), supply chain resilience (Nikookar & Yanadori, 2022; Panigrahi et al., 2022), human capital management strategy (Alipour, 2012; Douglas, 2021; Moustaghfir, 2008; Nadeem et al., 2017), creative climate (Farooq et al., 2021; Ibarra-Cisneros & Hernandez-Perlines, 2020; Mafabi et al., 2015), innovation (Ammirato et al., 2021; Pratono, 2021), ability to cope up with threats

and take advantage of the opportunities (Waal, 2021), risk management solutions (Calandro & Lane, 2006), and so on.

There has not been any research study to validate the effect of pandemic-induced performance changes on the stock market returns. Therefore, this study intends to confirm whether the effect of the pandemic on the sector's performance in India is reflected in its equity returns or not. This is particularly important to check since the investors are subject to bounded rationality, and there is some herding behaviour that the markets got subjected to during the crisis period (Wu et al., 2020), along with the information asymmetry (Park et al., 2021).

This research study has been structured as follows. The first section discusses the motivation behind the study while the second section performs the review of the existing literature on the topic, and identifies the gap in the existing literature that this study addresses. The second section also results in deriving the research hypothesis that this study attempts to test. The third section discusses the research methodology in detail and explains the three broad steps followed in this study. The fourth section elaborates the findings of the study, while the fifth section sheds light on the implications of this research study for the investors. The fifth section concludes the article while mentioning the limitations of the research and the possible research extensions of this study that can be explored in the future.

Literature Review and Research Hypothesis Formation

COVID-19 has been a very severe pandemic and has brought about the worst economic recession in the past (Borio, 2020; Chaudhary et al., 2020; Verma et al., 2021). Many of the industries bore the brunt of the pandemic. Some of such examples are aviation (Abu-Rayash & Dincer, 2020; Agrawal, 2020; Sun et al., 2021), travel and tourism (Mroz, 2021; Skare et al., 2021; Toubes et al., 2021), and hospitality (Crespí-Cladera et al., 2021; Pillai et al., 2021; Sharma et al., 2021).

There also exist cases of a few industries that have benefited immensely from the pandemic. A few such examples are Edu-tech (Damşa et al., 2021; Maity et al., 2021; Milenkova & Lendzhova, 2021), healthcare (Nguyen et al., 2021), insurance (Harris et al., 2021; Riyazahmed, 2021), IT-enabled services (Bai et al., 2021; Casale et al., 2021; Dash & Chakraborty, 2021; Feroz et al., 2021) and e-commerce (Silva & Bonetti, 2021; Singh et al., 2021). While a few sectors such as the FMCG sector have been quite neutral to the influence of the pandemic (Shetty et al., 2020).

The cash flows from all three types of activities, whether operating, investing, or financing influence the stock returns (Chu, 1997). Therefore, returns on any equity stock are dependent on the fundamental performance of a firm (Navas et al., 2016). In addition, analysing the financial performance of the stocks before investing leads to significantly better returns on the investing decisions (Piotroski, 2000).

Post the pandemic, almost all the capital markets the world over have seen a bull run with the market capitalisation having substantially increased as a percentage of economic output or GDP. In the Indian equity market, the market

cap to the GDP ratio got close to 1 for the first time in the history of the Indian equity market. The overall market index has almost doubled in the period from April 2020 till December 2021.

As the returns in the equity markets are dependent on the underlying performance of any sector, it can be expected that the increase in returns for the pandemic-positive sectors should significantly exceed the increase in market returns. Similarly, the increase in returns in the pandemic-negative sectors should be lower than those in the market returns. Since no research work has been done to validate this hypothesis, this research study has been taken to check whether the stock market returns reflect the pandemic's influence on the underlying firms or not. Therefore, the hypothesis to be tested are as follows:

For the pandemic positive sectors (IT services, edutech, pharmaceutical, insurance, medical equipment and supplies):

$$\boldsymbol{H_0}\text{: } (\Delta\text{MR of the sector})_{\text{post}-\text{pandemic}} \leq (\Delta\text{MR of the sector})_{\text{pre}-\text{pandemic}}$$

$$\boldsymbol{H_1}\text{: } (\Delta\text{MR of the sector})_{\text{post}-\text{pandemic}} > (\Delta\text{MR of the sector})_{\text{pre}-\text{pandemic}}$$

where

$$(\Delta\text{MR of sector j})_{\text{post}-\text{pandemic}} = \text{MR}_{\text{post}-\text{pandemic for sector j}} - \text{MR}_{\text{post}-\text{pandemic for index}}$$

$$\left(\Delta\text{MR of sector j}\right)_{\text{pre}-\text{pandemic}} = \text{MR}_{\text{pre}-\text{pandemic for sector j}} - \text{MR}_{\text{pre}-\text{pandemic for index}}$$

For the pandemic negative sectors (aviation, hospitality, media, tourism, automotive, retailing):

$$\boldsymbol{H_0}\text{: } (\Delta\text{MR of the sector})_{\text{post}-\text{pandemic}} \geq (\Delta\text{MR of the sector})_{\text{pre}-\text{pandemic}}$$

$$\boldsymbol{H_1}\text{: } (\Delta\text{MR of the sector})_{\text{post}-\text{pandemic}} < (\Delta\text{MR of the sector})_{\text{pre}-\text{pandemic}}$$

For the pandemic neutral sector (fast moving consumer goods)

Test 11: $\boldsymbol{H_0}\text{: } (\Delta\text{MR of the sector})_{\text{post}-\text{pandemic}} = (\Delta\text{MR of the sector})_{\text{pre}-\text{pandemic}}$

$$\boldsymbol{H_1}\text{: } (\Delta\text{MR of the sector})_{\text{post}-\text{pandemic}} \neq (\Delta\text{MR of the sector})_{\text{pre}-\text{pandemic}}$$

Research Methodology

The research methodology can be explained to consist of three key steps as mentioned below:

Step 1: Classification of sectors based on the assumed influence of the pandemic as per the prevailing construct.

Step 2: Validation of the prevailing-construct-based classification with the analysis of the financial statements for each sector.

Step 3: Validating whether the influence of pandemic is reflected in the stock returns.

Discussion on Step 1 (Classification of Sectors Based on the Assumed Influence of the Pandemic as per the Prevailing Construct)

First of all, the sectors were classified based on the prevailing construct for being positively or negatively influenced by the pandemic. This resulted in the following categorisation:

Industries that are assumed to be positively affected by the pandemic

1. Edutech
2. Information technology (IT) services and consulting
3. Life and health insurance
4. Medical equipment, supplies and accessories
5. Pharmaceutical (healthcare)

Industries that are assumed to be negatively affected by the pandemic

1. Automobiles
2. Aviation
3. Film production, distribution and entertainment (media)
4. Hotel, resorts and restaurants (hospitality)
5. Travel services (tourism)
6. Retailing

Industries that are assumed to be not affected by (or neutral to) the pandemic

1. Fast moving consumer goods

Discussion on Step 2 (Validation of the Prevailing-Construct-Based Classification with the Analysis of the Financial Statements for Each Sector)

In this step, the top stocks by market capitalisation from among the NIFTY 50 stocks were selected in each sector. For those sectors that had inadequate representation in NIFTY 50, even the stocks outside NIFTY 50 were selected to have a minimum of three stocks for each of the sectors.

The rationale for using NIFTY 50 as an index is that it has been used by many studies earlier in the field of equity research, some of which are Agarwalla et al. (2021), Dungore and Patel (2021), Shaik and Gulhane (2021) and Parab et al. (2020). Nifty and tertiary sectors are positively related to each other (Swaroop & Mishra, 2018). Since the tertiary sector is the bigger contributor to the India growth story, NIFTY 50 can be considered a true reflection of economic development. Hence, the authors used NIFTY 50 as the index. It has also been established that stocks are a significant indicator of economic development (Atje & Jovanovic, 1993; Caporale et al., 2004; Duca, 2007).

Then, the financial statements of the selected firms in each sector were sourced from moneycontrol.com and analysed to validate the assumed effect of the pandemic. The annual total income and EBITDA of each company was taken from 2017 to 2021. The annual growth rate was computed for the period before

the pandemic (FY 2017, 2018, 2019) and the period after the pandemic (FY 2020 and FY 2021). The relevant financial ratios of the sectors were also considered, and the changes in these ratios were studied for the period before and after the pandemic. The weighted average of the growth rate of all the companies in the sample was considered as a proxy of the overall % growth of that whole sector.

This financial analysis of the different sectors is also shown in Tables A2.1, A3.1, A4.1, A5.1, A6.1, A7.1, A8.1, A9.1, A10.1, A11.1, A12.1 and A13.1 in the Annexure. All the values of each company of each sector are shown in the Annexure.

Discussion on Step 3 (Validating whether the Influence of Pandemic Is Reflected in the Stock Returns)

The next step was to find the average stock returns of each firm before and after the pandemic using the stock price trends as obtained from the website moneycontrol.com, and to evaluate if there was any clear indication of influence due to the pandemic. The time series of the stock prices thus obtained was divided into two periods. The period from January 2017 (except for a few stocks that got listed a little later than January 2017) to December 2019 was considered the period before the pandemic, while the one from January 2020 to December 2021 was considered the period after the pandemic. The average monthly stock returns of each firm in these two periods were calculated. Similarly, the average monthly stock returns on the NIFTY were also calculated for both periods. This is also shown in Tables A2.2, A3.2, A4.2, A5.2, A6.2, A7.2, A8.2, A9.2, A10.2, A11.2, A12.2 and A13.2 in the Annexure.

Then, the average monthly stock returns on these firms in each sector were computed using a geometric mean. After this, the difference between the average of the stock returns on each sector and the average of the index returns was computed to assess whether a stock is performing better or worse than the market. The difference (delta) between the average return after the pandemic and before the pandemic of each stock and the market returns was also computed. This is also shown in Tables A2.3, A3.3, A4.3, A5.3, A6.3, A7.3, A8.3, A9.3, A10.3, A11.3, A12.3 and A13.3 in the Annexure.

Table A1 captures the difference in the annualised returns on NIFTY 50 before the pandemic and after the pandemic.

Research Findings

This section describes the findings of the three steps followed in the research study as mentioned in the preceding section.

Findings of Step 1 (Classification of Sectors Based on the Assumed Influence of the Pandemic as per the Prevailing Construct)

As discussed in the section *Discussion on Step 1 (Classification of Sectors Based on the Assumed Influence of the Pandemic as per the Prevailing Construct)*, the various sectors in the industry were classified as per the assumed influence of the pandemic on them based on public opinion and prevailing views about how they would be influenced by the pandemic. Table 1 mentions the assumed influence along with the rationale based on the prevailing construct for the different sectors.

Table 1. Assumed Influence of the Pandemic on Different Sectors.

Sector	Assumed Influence	Rationale Based on the Prevailing Construct	Literature Reference
Edutech	Positive	COVID-19 had led to the closing of schools globally and the mode of teaching and learning had shifted to digital mode on an unprecedented scale. This has led to a boost for the Edutech industry.	Li & Lalani, 2020
IT services and consulting	Positive	As more and more of our daily activities go online, more digital transformation and IT-enablement projects are required. The IT industry is expected to grow to more than double its existing size from 2020 to 2025 according to a study. The demand for social media platforms and software was also growing.	Market Data Forecast, 2020
Life and health insurance	Positive	As more people get conscious of coronavirus, they become more cautious of their health and the need for safeguarding the future of their families. Previous epidemics have also witnessed a substantial increase in demand for term and health insurance plans during these times, according to research. As a result of the epidemic, many people now regard insurance to be a vital precaution against unanticipated events. Life insurance is increasingly considered a necessary investment. According to a poll conducted by Benori Knowledge (with over 100 respondents), 70% of uninsured respondents now feel the need to acquire a life insurance policy. Customers value life insurance products, and the uninsured are increasingly considering it as a need.	FE Bureau, 2020; Maitra, 2021

(Table 1 continued)

(Table 1 continued)

Sector	Assumed Influence	Rationale Based on the Prevailing Construct	Literature Reference
Medical equipment, supplies and accessories	Positive	As there are increased patients due to pandemics, there is an increase in demand for medical equipment, supplies and activities to treat patients. During the 2003 SARS pandemic as well, demand for medical equipment spiked in a short period, with low long-term sustainability.	GEP, 2020
Pharmaceutical	Positive	As the concern for health increases among the consumers, the demand and use of pharmaceutical drugs and vaccines is assumed to rise. There was increased spending on pharmaceutical innovation to get the solution for the COVID-19 problem, and also more consumer spending on healthcare and medical products and services.	Robinson, 2021
Food processing	Neutral	As the demand for food is always there, being a basic necessity makes it neutral to the influence of the pandemic. While the FMCG giants such as ITC benefitted from the growing consumer demand of the food and grocery items and ready-to-cook items during the work-from-home mode, the demand for certain product categories such as cigarettes reduced during the lockdown, making Covid-19 a mixed bag of blessings and bane for the FMCG sector.	Sundar, 2021
Automobiles	Negative	With more people working from home or losing jobs, the requirement for automobiles had decreased. Automobile sales had plummeted globally and the plants were also shut down during the pandemic times. The supply chains were highly disrupted due to domestic as well as international disruptions. The global impact of the pandemic on this industry was estimated to be $5.7 billion. The epidemic forced the company to halt all manufacturing and activities. According to the Society of Indian Automobile Manufacturers, all vehicle categories had negative growth in FY21.	Meticulous Market Research Pvt. Ltd, 2020

(Table 1 continued)

(Table 1 continued)

Sector	Assumed Influence	Rationale Based on the Prevailing Construct	Literature Reference
Aviation	Negative	With the imposition of barriers on international and domestic traffic, the demand for aviation is expected to fall. The mobility of people, as well as goods, was badly impacted by the pandemic, and the cancellation of international and domestic flights to contain the spread of the virus was commonplace.	Business Wire, 2020
Film production, distribution and entertainment	Negative	Theatres are shut down due to the pandemic, as well as film actors and actresses are locked in their homes. Hence, filmmakers have halted their work. Big releases have been postponed, film, TV and web series production has been suspended, cinema theatres have been unable to show films, and low-wage workers are trying to make ends meet. Because of the coronavirus epidemic, the Indian film business, which is worth ₹183 billion, is experiencing its worst period.	Shekhar, 2020
Hotel, resort and restaurants	Negative	As traveling and eating out is almost nil due to the fear of coronavirus, the use of public places like restaurants, hotels and resorts has been reduced. The lockdown had resulted in the closure of restaurants and hotels and the people had stopped eating outside or staying outside, resulting in a massive blow to the businesses of the hospitality industry.	Bartik et al., 2020
Retailing	Negative	As people stopped going out due to the fear of coronavirus, and the disposable income of the people at large is impacted, a reduction in the retail sector revenues is expected. As the businesses were hit and the jobs were gone, the spending power of the people had declined, and they cut the spending on non-essential items. The shocks were felt in the brick-and-mortar stores as well as in the online stores.	Naeem, 2021; OECD, 2020
Travel services	Negative	As there is no demand for travel amidst the lockdowns, there is no work for travel services. The pandemic-induced lockdowns had led to a drastic reduction in travel and tourism.	Uğur & Akbıyık, 2020

Findings of Step 2 (Validation of the Prevailing-Construct-Based Classification with the Analysis of the Financial Statements for Each Sector)

This section captures the actual impact of the pandemic on the performance of different sectors as measured from the annualised % rate of growth of revenues and EBITDA figures of each sector that were calculated using the financial statements and are shown in Tables A2.1, A3.1, A4.1, A5.1, A6.1, A7.1, A8.1, A9.1, A10.1, A11.1, A12.1 and A13.1 in the Annexure. Table 2 summarises the findings from the tables mentioned above in the Annexure.

Explaining the Rationale behind the Cases of Mismatch between Financial Statements and Prevailing Constructs

Film Production and Distribution. In the year 2020, EROS NOW will have gained 19 million premium paid members and 224 million registered users from over 150 countries across the world to circumvent limitations (BestMediaInfo Bureau, 2021). SAREGAMA India Ltd, a music label, reported a more than twofold rise in consolidated net profit because of the increased digital media consumption during the pandemic's stay-at-home period (PTI, 2021). UFO Moviez India Limited entered the film distribution business to consolidate and position itself as a one-stop pan-India film distributor. UFO Moviez India Ltd. also partnered with another player in the industry to provide companies throughout the country with influencer marketing, branded content and social media solutions (Exchange4media Staff, 2021). The media and entertainment witnessed a favourable impact on financial accounts due to the reasons stated above.

Life Insurance. The business was mainly suspended because of the businesses' inability to move their business processes digitally and, therefore, suffered during the initial phase of Covid. Hence, the financial statements show that life and health insurance were negatively impacted by the pandemic. However, companies have been reminded of the significance of customer-centricity as a result of these shifts in consumer thinking. Players have responded quickly, introducing pandemic-specific insurance, plans tailored to client expectations and needs, digital access to services and improved claim settlement procedures. Because many businesses were able to survive and change their businesses digitally during the first phase of Covid, the drop-off in this industry is not significant.

Automobile. Pre-Covid, the expansion of India's automobile sector was hampered by positive improvements such as GST, the transition to BS6 emission standards (effective 1 April 2020) from BS4, and so on. However, a positive phenomenon happened with the advent of COVID-19. Because social and physical separation will be the norm for some time, a segment of commuters may choose not to use public transportation, resulting in increased demand for personal vehicles, particularly two-wheelers and affordable four-wheelers. Additionally, various government policies, such as the farm bill, which increased tractor manufacturing and production for farmers, prompted many investors to invest, and thus the market grew. Hence, the financial statements show an improvement in performance for this sector since the sector was already struggling before the pandemic and could become more cost-efficient by responding fast to the pandemic.

Table 2. Do Financial Statements Reflect the Assumed Effect of the Pandemic?

Sector	Influence as per Prevailing Construct	Influence as per Financial Statements	Do Financial Statements Reflect the Prevailing Construct?	Instances of Mismatch between Prevailing Construct and Financial Statements
Automobile	Negative	Positive	No	TVS Motors, Maruthi, Eicher Motors, Tata Motors, Hindustan Motors
Aviation	Negative	Negative	Yes	
Health and life insurance	Positive	Negative	No	SBI Life, HDFC Life, ICICI PruLife
Travel	Negative	Negative	Yes	
Food processing (FMCG)	Neutral	Positive	No	Nestle, Britannia
Hotels, resorts and restaurants	Negative	Negative	Yes	MHRIL
Pharmaceutical	Positive	Negative	No	Dr Reddys, Divislab
Retail	Negative	Negative	Yes	
Edutech	Positive	Positive	Yes	NIIT Ltd
Media and entertainment	Negative	Positive	No	Pfocus, Saregama
Medical equipment, supplies and accessories	Positive	Positive	Yes	Opto Circuit
IT services and consultancy	Positive	Positive	Yes	Tech Mahindra

Food Processing. With the COVID-19 spread boosting biscuit sales, Britannia, the producer of Good Day, has prioritised the manufacturing of such goods, putting plans to expand its croissant and salty snack options on hold. This has caused a halt in the company's journey to become a total foods company, and as a result, the market value has dropped slightly, but not dramatically, as the company was able to focus all of its resources on 20% of its products, which generated about 80% revenue during these times and stopped the rest of the product manufacturing (Ahmad, 2020). Domestic sales account for a major percentage of Nestle India's income, accounting for 94.7% of total revenue in 2020. While domestic sales climbed by 8.5% year over year in 2020, the Covid-19 lockdown had a negative influence on performance in the June quarter, with sales only increasing by 2.6%. As a result, domestic sales grew by 10% to 11% year over year in the last three quarters. In comparison to the previous year, the total domestic volume for 2020 grew by 5.7%. E-share commerce's domestic sales have risen to 3.7% in 2020, up from 0.6% in 2016. While COVID had an impact on Nestle India, causing a drop in its stock price, it did not have a significant impact because of its online meal delivery system, which witnessed significant growth in its numbers and orders. Because there was such a high demand for packaged and processed foods during the pandemic, many companies producing them were able to sell large quantities of their products at once, increasing their revenue and market share. Additionally, because these companies had limited product differentiation, their resources were not depleted. Hence, the food processing industry in India was positively impacted by the pandemic as shown by the financial statements.

Findings of Step 3 (Validating whether the Influence of Pandemic Is Reflected in the Stock Returns)

This is according to the delta of the market return (industry annual return—market annual return) which is also shown in the Annexure.

Table 3 captures the findings of step 3 to validate the effect of pandemic on stock market returns.

Table 3. Do Stock Market Returns Reflect the Assumed Effect of the Pandemic?

Sector	% Annual Returns on Sector Stocks—% Annual Returns on Index before the Pandemic	% Annual Returns on Sector Stocks—% Annual Returns on the Index after the Pandemic	Do Stock Market Returns Reflect the Pandemic's Influence?
Edutech	–6.27%	80.95%	Yes, positive influence is reflected
IT services and consulting	12.92%	25.65%	Yes, positive influence is reflected

(Table 3 continued)

(Table 3 continued)

Sector	% Annual Returns on Sector Stocks—% Annual Returns on Index before the Pandemic	% Annual Returns on Sector Stocks—% Annual Returns on the Index after the Pandemic	Do Stock Market Returns Reflect the Pandemic's Influence?
Life and health insurance	7.48%	–11.88%	No, positive influence is not reflected because the firms were not ready to do the business in digital ways and could not make the best out of the opportunity.
Medical equipment, supplies and accessories	–12.88%	111.55%	Yes, positive influence is reflected
Pharmaceutical	–10.57%	36.74%	Yes, positive influence is reflected
Food processing	21.18%	–8.57%	No, the neutral influence is not reflected since the bigger players focussed on select few products only.
Automobiles	–19.23%	7.27%	No, the negative influence is not reflected. This is because the industry was already experiencing troubles before the pandemic.
Aviation	2.86%	–0.69%	Yes, negative influence is reflected
Film production, distribution and entertainment	1.70%	20.56%	No, negative influence is not reflected. It is due to digital initiatives taken by many players.
Hotel, resort and restaurants	–4.57%	–28.14%	Yes, negative influence is reflected
Retailing	25.38%	8.94%	Yes, negative influence is reflected

(Table 3 continued)

(Table 3 continued)

Sector	% Annual Returns on Sector Stocks—% Annual Returns on Index before the Pandemic	% Annual Returns on Sector Stocks—% Annual Returns on the Index after the Pandemic	Do Stock Market Returns Reflect the Pandemic's Influence?
Travel services	–16.58%	–5.89%	No, negative influence is not reflected. The reason for this could not be explained by the study.

Hypothesis Testing

This is according to the delta of the stock return and market return before and after pandemic, which is also shown in the Annexure.

Implications of the Study for Managers and Investors

Retail investors, investment bankers, fund managers and financial consultants need to optimise the returns on their investments. Fundamental research is many times resorted to by them to devise their portfolio strategies. The basic premise behind the fundamental analysis is that the financial statements are the mirror of the firm's performance in the dynamic macroeconomic scenario. However, if the effect of the contemporary happenings is not incorporated in the stock market prices, it leads to market inefficiencies as well as improper allocation of the investor funds to the industry. In the long run, it may lead to erosion of investor confidence and thereby a failure of the capital markets. Thus, the fundamental analysis will not enable making the right investing decisions if the stock market returns do not reflect the contemporary business happenings.

Considering this, the research study has played an important role in establishing that the stock market returns are a reflection of the business realities at an overall level. That serves as a relief for the investing community and reinforces the fact that the stock fundamentals in the context of the macroeconomic scenario do matter and cannot be ignored while making business decisions.

But at the same time, this research study also cautions them to consider the business' prospective performance in its entirety while investing in the equity markets. For example, this study had observed many exceptions and explained the rationale behind them. For example, a few of the media and entertainment industry was able to better contrary to the popular opinion because they adopted the digital chord well on time. Similarly, the automotive industry was an exception to the popular opinion because it was already in the doldrums before the advent of the pandemic and was able to bring in resource efficiencies during the pandemic resulting in EBITDA improvements.

Table 4 reflects the findings of paired *t*-test conducted on stock returns to check the various hypotheses defined in the study.

Table 4. Findings of Paired *t*-Test Conducted on Stock Returns to Check the Hypothesis.

Sector Hypothesis	*P* Value	Decision with the Null Hypothesis at 75% Confidence Level
H_o: $(\Delta\text{MR ITS \& C})_{\text{post-pandemic}} \leq (\Delta\text{MR ITS \& C})_{\text{pre-pandemic}}$ H_1: $(\Delta\text{MR ITS \& C})_{\text{post-pandemic}} > (\Delta\text{MR ITS \& C})_{\text{pre-pandemic}}$	.06727	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta\text{MR edutech})_{\text{post-pandemic}} \leq (\Delta\text{MR of edutech})_{\text{pre-pandemic}}$ H_1: $(\Delta\text{MR edutech})_{\text{post-pandemic}} > (\Delta\text{MR of edutech})_{\text{pre-pandemic}}$	.03998	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta\text{MR pharma})_{\text{post-pandemic}} \leq (\Delta\text{MR pharma})_{\text{pre-pandemic}}$ H_1: $(\Delta\text{MR pharma})_{\text{post-pandemic}} > (\Delta\text{MR pharma})_{\text{pre-pandemic}}$	.00347	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta\text{MR Insurance})_{\text{post-pandemic}} \leq (\Delta\text{MR Insurance})_{\text{pre-pandemic}}$ H_1: $(\Delta\text{MR Insurance})_{\text{post-pandemic}} > (\Delta\text{MR Insurance})_{\text{pre-pandemic}}$	.05744	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta\text{MR ME,S \& A})_{\text{post-pandemic}} \leq (\Delta\text{MR Medical})_{\text{pre-pandemic}}$ H_1: $(\Delta\text{MR ME,S \& A})_{\text{post-pandemic}} > (\Delta\text{MR Medical})_{\text{pre-pandemic}}$	.00253	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta\text{MR aviation})_{\text{post-pandemic}} \geq (\Delta\text{MR aviation})_{\text{pre-pandemic}}$ H_1: $(\Delta\text{MR aviation})_{\text{post-pandemic}} < (\text{XMR aviation})_{\text{pre-pandemic}}$	.34109	Accepted (stock returns do not reflect the pandemic's influence)

(Table 4 continued)

(Table 4 continued)

Sector Hypothesis	*P* Value	Decision with the Null Hypothesis at 75% Confidence Level
H_o: $(\Delta MR\ hospitality)_{post-pandemic} \geq (\Delta MR\ hospitality)_{pre\ pandemic}$ H_1: $(\Delta MR\ hospitality)_{post\ pandemic} < (\Delta MR\ hospitality)_{pre\ pandemic}$	.4857	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta MR\ media)_{post\ pandemic} \geq (\Delta MR\ media)_{pre\ pandemic}$ H_1: $(\Delta MR\ media)_{post\ pandemic} < (\Delta MR\ media)_{pre\ pandemic}$	.15071	Accepted (stock returns do not reflect the pandemic's influence)
H_o: $(\Delta MR\ tourism)_{post\ pandemic} \geq (\Delta MR\ tourism)_{pre\ pandemic}$ H_1: $(\Delta MR\ tourism)_{post\ pandemic} < (\Delta MR\ tourism)_{pre\ pandemic}$	.04269	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta MR\ auto)_{post\ pandemic} \geq (\Delta MR\ auto)_{pre\ pandemic}$ H_1: $(\Delta MR\ auto)_{post\ pandemic} < (\Delta MR\ auto)_{pre\ pandemic}$	.04438	Rejected (stock markets reflect the assumed influence of pandemic)
H_o: $(\Delta MR\ FMCG)_{post\ pandemic} = (\Delta MR\ FMCG)_{pre\ pandemic}$ H_1: $(\Delta MR\ FMCG)_{post\ pandemic} \neq (\Delta MR\ FMCG)_{pre\ pandemic}$	.24657	Rejected (stock markets reflect the assumed influence of pandemic)

It can also be observed that there is some inconsistency between the findings obtained from hypothesis testing on stock returns and those from weighted average stock returns. This is because the *t*-tests give equal weightage to all the observations irrespective of the size of the firm represented by the stock.

Thus, from the findings, it can be inferred that the stock market returns have captured the influence of the pandemic on the sector for most of the sectors. The

reasons for the exceptions have been explored and proposed, except in the case of the tourism sector, where any suitable reasoning could not be found.

Conclusions

This research study has an important achievement of validating the influence of the pandemic's business effects on the stock market returns on an overall basis. The study is quite robust since the major stocks by market capitalisation, which can be considered as a good proxy of the respective sectors of Indian economy, have been considered.

However, there are a few limitations of the study. First, there may be a few large players that are not listed in the equity market or have no significant market capitalisation, but they are a player of sizeable size when it comes to the value of the firm. Such firms could have been ignored in this study. Second, while determining the overall stock returns for any sector, the weighted average of the individual stock returns has been computed with weights being the proportion of the market capitalisation of those stocks. But the market capitalisation of the listed stocks may not always be a correct proxy of the relative size of a business. Third, while evaluating the financial performance of the businesses pre- and post-pandemic, the standalone financial statements were not available for a few businesses that are diversified conglomerates. In such cases, it has been assumed that the consolidated financial statements reflect the performance of the standalone business, which may not always be true.

This study can be extended in many directions in the future. First, the parallels can be drawn between the findings of this study and similar studies on the earlier financial busts such as the dot-com crash and the subprime crisis. In addition, an analytical comparison can be done on whether the ability of a financial crisis to influence the stock market returns is also related to the nature of the crisis.

Second, this study was limited to only NIFTY 50 stocks, while it can be carried out on a larger sample of stocks from each industry so that the sampling errors can be eliminated, as the standard error of the sampling distribution with fall with a larger sample.

Third, the different sectors may exhibit varying levels of business cyclicity. Irrespective of whether the cyclicity is positive or negative, it may be of different extent for not only different sectors but also for the different firms within each sector. If a study can be done to gauge the pandemic's influence on stock market returns in the context of cyclicity, it can help draw more insights.

Fourth, if the resilience of the sectors or the businesses to the financial crisis can also be measured and brought into consideration, some important insights can be drawn on whether the ability of a macroeconomic situation to influence the stock returns is dependent on the resilience of that business or not.

Thus, this research study has been quite conclusive, but it also has many limitations and possible directions of extension in the future, which can be pursued to enhance the existing body of knowledge on the behaviour of equity market returns.

Annexure

Table A1. Summary of Stock Returns on NIFTY.

	NIFTY before Pandemic	NIFTY after Pandemic
Average monthly return	1.01%	1.57%
Annualised returns	12.81%	20.56%
Delta of the stock	7.75%	

Table A2.1. Financial Statement Analysis of Selected Stocks in the Indian Automotive Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	31.82%	23.01%	Negative	Positive
% growth EBITDA	88.13%	2002.29%	Positive	
% growth asset turnover ratio	–1.80%	92.03%	Positive	
% growth net profit margin	42.78%	51.30%	Positive	
% growth return on assets	82.12%	125.42%	Positive	

Table A2.2. ΔMR for Indian Automotive Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
EICHER MOTORS	0.20%	1.67%	1.01%	1.57%	–0.80%	0.10%
HIND MOTORS	–1.50%	2.49%	1.01%	1.57%	–2.51%	0.92%
MARUTI SUZUKI	0.20%	1.67%	1.01%	1.57%	–0.80%	0.10%
TATA MOTORS	–2.93%	3.31%	1.01%	1.57%	–3.94%	1.74%
TVS-MOTOR	0.59%	1.52%	1.01%	1.57%	–0.42%	–0.05%

Table A2.3. Premium of Indian Automotive Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	–0.55%	2.07%
Annualised returns	–6.42%	27.82%
Delta of the stock (industry—index)	–19.23%	7.27%

Table A3.1. Financial Statement Analysis of Selected Stocks in the Indian Aviation Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	17.98%	–45.31%	Negative	Negative
% growth EBITDA	–27.97%	–68.02%	Negative	
% growth asset turnover ratio	3.86%	–42.96%	Negative	
% growth net profit margin	–58.32%	–24.86	Negative	
% growth return on assets	–55.51%	–8.855	Negative	

Table A3.2. ΔMR for Indian Aviation Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Re-turn after Pandemic
GLOBAL-VECTRA	–1.99%	–0.55%	1.01%	1.57%	–3.00%	–2.12%
INDIGO	1.22%	1.52%	1.01%	1.57%	0.21%	–0.05%

Table A3.3. Premium of Indian Aviation Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	1.22%	1.52%
Annualised returns	15.67%	19.87%
Delta of the stock (industry—market)	2.86%	–0.69%

Table A4.1. Financial Statement Analysis of Selected Stocks in the Indian Media Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	15.96%	–49.56%	Negative	Negative
% growth EBITDA	31.53%	–31.33%	Negative	
% growth asset turnover ratio	2.46%	–67.98%	Negative	
% growth net profit margin	7.78%	–836.43%	Negative	
% growth return on assets	11.01%	–836.43%	Negative	

Table A4.2. ΔMR for Indian Media and Entertainment Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns–Index Return after Pandemic
EROSMEDIA	–6.79%	4.01%	1.01%	1.57%	–7.80%	2.44%
INOXLEISURE	1.67%	–1.40%	1.01%	1.57%	0.66%	–2.97%
PFOCUS	–1.87%	1.34%	1.01%	1.57%	–2.88%	–0.23%
PVR	1.26%	–1.85%	1.01%	1.57%	0.25%	–3.42%
SAREGAMA	1.95%	12.55%	1.01%	1.57%	0.95%	10.98%
UFO	–3.16%	–0.74%	1.01%	1.57%	–4.17%	–2.31%

Table A4.3. Premium of Indian Media and Entertainment Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	1.14%	2.91%
Annualised returns	14.51%	41.11%
Delta of the stock (industry—market)	1.70%	20.56%

Table A5.1. Financial Statement Analysis of Selected Stocks in the Indian Insurance Industry.

Financial Metric	Before Pandemic	After Pandemic	Influence	Overall Influence
% growth total turnover	14.60%	8.46%	Negative	Negative
% growth EBITDA	6.07%	6.20%	Neutral	
% growth asset turnover ratio	–2.21%	–20.29%	Negative	
% growth return on assets	–9.07%	–27.43%	Negative	
% growth net profit margin	–7.43%	–8.45%	Negative	

Table A5.2. ΔMR for Indian Insurance Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
HDFC LIFE	2.07%	0.76%	0.60%	1.57%	1.47%	–0.81%

(Table A5.2. continued)

(Table A5.2. continued)

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
ICICIPRU-LIFE	1.03%	1.17%	1.01%	1.57%	0.02%	–0.40%
SBILIFE	1.39%	0.13%	0.70%	1.57%	0.69%	–1.44%

Table A5.3. Premium of Indian Insurance Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	1.55%	0.70%
Annualised returns	20.29%	8.68%
Delta of the stock (industry—market)	7.48%	–11.88%

Table A6.1. Financial Statement Analysis of Selected Stocks in the Indian Hospitality Industry.

Financial Metric	Before Pandemic	After Pandemic	Influence	Overall Influence
% growth total turnover	6.55%	–52.09%	Negative	Negative
% growth EBITDA	3.34%	–98.32%	Negative	
% growth debt to equity	–11.75%	27.52%	Negative	
% growth asset turnover ratio	1.29%	–50.65%	Negative	
% growth return on assets	4.25%	–144.38%	Negative	
% growth net profit margin	7.92%	–348.70%	Negative	

Table A6.2. ΔMR for Indian Hospitality Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
COFFEEDAY	–4.46%	2.19%	1.01%	1.57%	–5.47%	0.62%
EIH LIMITED	1.12%	–0.96%	1.01%	1.57%	0.11%	–2.53%
INDIAN HOTEL COMPANY LIMITED	1.06%	0.25%	1.01%	1.57%	0.05%	–1.32%
MHRIL	–0.48%	0.96%	1.01%	1.57%	–1.49%	–0.61%
TAJGVK	0.63%	–1.45%	1.01%	1.57%	–0.38%	–3.03%

Table A6.3. Premium of Indian Hospitality Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	0.66%	–0.65%
Annualised returns	8.24%	–7.58%
Delta of the stock (industry—market)	–4.57%	–28.14%

Table A7.1. Financial Statement Analysis of Selected Stocks in the Indian Retail Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	14.43%	–36.85%	Negative	Negative
% growth EBITDA	22.46%	–50.73%	Negative	
% growth asset turnover ratio	8.29%	–46.86%	Negative	
% growth inventory turnover ratio	–7.50%	–15.56%	Negative	
% growth net profit margin	48.92%	–219.15%	Negative	
% growth return on assets	75.02%	–138.48%	Negative	

Table A7.2. ΔMR for Indian Retail Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Re-turn after Pandemic
ABFRL	1.25%	–0.50%	1.01%	1.57%	0.24%	–2.07%
DMART	2.90%	2.62%	0.84%	1.57%	2.06%	1.05%
FRETAIL	2.04%	–8.77%	1.01%	1.57%	1.03%	–10.34%
TRENT	2.33%	2.43%	1.01%	1.57%	1.32%	0.86%
SHOPER-STOP	0.74%	–2.81%	1.01%	1.57%	–0.26%	–4.38%
VMART	3.25%	2.37%	1.01%	1.57%	2.24%	0.80%

Table A7.3. Premium of Indian Retail Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	2.73%	2.18%
Annualised returns	38.19%	29.50%
Delta of the stock (industry—market)	25.38%	8.94%

Table A8.1. Financial Statement Analysis of Selected Stocks in the Indian Travel and Tourism Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	44.60%	–49.23%	Negative	Negative
% growth EBITDA	31.64%	–319.84%	Negative	
% growth return on assets	492.02%	–399.82%	Negative	
% growth asset turnover ratio	24.15%	–47.32%	Negative	
% growth net profit margin	563.68%	–841.02%	Negative	

Table A8.2. ΔMR for Indian Travel and Tourism Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
BLS	–2.84%	4.00%	3.59%	1.57%	–6.42%	2.43%
COX & KINGS	–12.72%	4.08%	1.01%	1.57%	–13.73%	2.51%
CROWN-TOURS	–2.00%	1.49%	1.15%	1.48%	–3.15%	0.01%
ITHL	–2.42%	0.97%	1.15%	1.48%	–3.57%	–0.51%
THOM-ASCOOK	–0.18%	1.01%	1.01%	1.57%	–1.19%	–0.56%

Table A8.3. Premium of Indian Travel and Tourism Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	–0.32%	1.15%
Annualised returns	–3.77%	14.66%
Delta of the stock (industry–market)	–16.58%	–5.89%

Table A9.1. Financial Statement Analysis of Selected Stocks in the Indian FMCG Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	12.27%	3.13%	Negative	Negative
% growth EBITDA	21.52%	85.20%	Positive	
% growth PBDIT margin	8.33%	83.15%	Positive	
% growth asset turnover ratio	–3.89%	2.19%	Positive	
% growth net profit margin	9.71%	30.31%	Positive	

Table A9.2. ΔMR for Indian FMCG Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
ADF-FOODS	2.11%	6.46%	1.01%	1.57%	1.10%	4.89%
APEX	–0.66%	0.79%	1.01%	1.57%	–1.67%	–0.78%
BRITAN-NIA	1.97%	0.83%	1.01%	1.57%	0.96%	–0.74%
DFM-FOODS	–1.00%	1.56%	1.01%	1.57%	–2.01%	–0.01%
HERITG-FOOD	–0.83%	1.49%	1.01%	1.57%	–1.84%	–0.08%
NESTLE-IND	2.82%	0.93%	1.01%	1.57%	1.81%	–0.64%

Table A9.3. Premium of Indian FMCG Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return%	2.47%	0.95%
Annualised returns	33.99%	11.99%
Delta of the stock (industry—market)	21.18%	–8.57%

Table A10.1. Financial Statement Analysis of Selected Stocks in the Indian Edutech Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	–11.57%	–19.13%	Negative	Positive
% growth EBITDA	–28.51%	30.04%	Positive	
% growth PBDIT margin	–41.72%	58.03%	Positive	
% growth net profit margin	–214.91%	–19.09%	Negative	

Table A10.2. ΔMR for Indian Edutech Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
APTECHT	–0.22%	2.64%	1.01%	1.57%	–1.23%	1.07%
EDUCOMP	–6.59%	6.64%	1.01%	1.57%	–7.60%	5.07%
JETKINGQ	–1.52%	2.42%	1.15%	1.48%	–2.66%	0.94%

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
NIITLTD	0.81%	6.90%	1.01%	1.57%	–0.20%	5.33%

Table A10.3. Premium of Indian Edutech Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	0.53%	6.01%
Annualised returns	6.54%	101.51%
Delta of the stock (industry—market)	–6.27%	80.95%

Table A11.1. Financial Statement Analysis of Selected Stocks in the Indian IT Services Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	11.62%	3.31%	Negative	Positive
% growth EBITDA	11.09%	18.02%	Positive	
% growth net profit margin	0.00%	10.95%	Positive	
% growth return on assets	4.88%	4.43%	Neutral	

Table A11.2. ΔMR for Indian IT Services Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
HCLTECH	1.07%	1.71%	1.01%	1.57%	0.06%	0.14%
INFY	2.37%	4.18%	1.01%	1.57%	1.36%	2.60%
MINDTREE	1.92%	6.13%	1.01%	1.57%	0.91%	4.56%
TECHM	1.70%	1.75%	1.01%	1.57%	0.69%	0.18%
TCS	2.10%	2.70%	1.01%	1.57%	1.09%	1.13%
WIPRO	1.06%	4.64%	1.01%	1.57%	0.05%	3.07%

Table A11.3. Premium of Indian IT Services Industry Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	1.93%	3.22%
Annualised returns	25.73%	46.21%
Delta of the stock (industry—market)	12.92%	25.65%

Table A12.1. Financial Statement Analysis of Selected Stocks in the Indian Medical Equipment Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	–14.59%	8.57%	Positive	Positive
% growth EBITDA	6.19%	75.66%	Positive	
% growth inventory turnover ratio	33.63%	–11.52%	Negative	
% growth asset turnover ratio	–20.88%	5.93%	Positive	

Table A12.2. ΔMR for Indian Medical Equipment Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
GKB	–2.91%	4.37%	1.01%	1.57%	–3.92%	2.80%
IDEAL TEXBUILD	–0.33%	3.44%	1.18%	1.48%	–1.51%	1.96%
OPTOCIR-CUI	–3.64%	2.82%	1.01%	1.57%	–4.65%	1.25%
POLYMED	0.07%	7.36%	1.01%	1.57%	–0.94%	5.79%

Table A12.3. Premium of Indian Medical Supplies Industry Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	–0.01%	7.27%
Annualised returns	–0.07%	132.11%
Delta of the stock (industry—market)	–12.88%	111.55%

Table A13.1. Financial Statement Analysis of Selected Stocks in the Indian Pharmaceutical Industry.

Financial Metric	Before Pandemic	After Pandemic	Direction of Change	Overall Influence
% growth total turnover	14.56%	7.81%	Negative	Negative
% growth EBITDA	29.80%	8.24%	Negative	
% growth return on net worth/equity	11.99%	–8.94%	Negative	
% growth asset turnover ratio	5.89%	2.67%	Negative	
% growth net profit margin	8.37%	–10.15%	Negative	

Table A13.2. ΔMR for Indian Pharmaceutical Stock Returns and Market Returns.

Stock Name	Average Monthly Return before Pandemic	Average Monthly Return after Pandemic	NIFTY Return before Pandemic	NIFTY Return after Pandemic	Stock Returns—Index Return before Pandemic	Stock Returns—Index Return after Pandemic
CADILAHC	–0.75%	5.06%	1.01%	1.57%	–1.76%	3.49%
CIPLA	–0.49%	4.39%	1.01%	1.57%	–1.50%	2.82%
DIVISLAB	2.90%	4.86%	1.01%	1.57%	1.89%	3.29%
DRREDDY	–0.04%	3.31%	1.01%	1.57%	–1.05%	1.74%
SUNPHARMA	–1.03%	2.62%	1.01%	1.57%	–2.04%	1.05%

Table A13.3. Premium of Indian Pharmaceutical Stock Returns over the Index Returns.

	Before Pandemic	After Pandemic
Average monthly return	0.18%	3.85%
Annualised returns	2.24%	57.30%
Delta of the stock (industry—market)	–10.57%	36.74%

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