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About the Journal

Recognizing the need for research for exploring new business models in the changing business scenario as well as developing new pedagogy in management, and for creating an influence on the academics as well as corporate thinkers, the institute embarked upon publication of its journal, *Review of Professional Management: A Journal of Management*, way back in 2003 and has been published regularly ever since. The Editorial Advisory Board of the journal comprises of eminent academics from universities and business schools from across geographies. It is a biannual peer-reviewed journal. It is an open access journal and all the publications of the journal are licensed under Creative Commons. The journal follows guidelines on publication ethics in accordance with The Committee on Publication Ethics (COPE).

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Aims and Scope

Review of Professional Management: A Journal of Management, a bi-annual peer-reviewed journal of New Delhi Institute of Management, provides a platform to academics, researchers, practitioners, and professionals from public, private and government sectors to share their original research, innovative practices and articles with Indian and international perspective that shape policy or governance or functioning of an organisation. The journal publishes conceptual, analytical, empirical, and perspective articles that significantly contribute to theory, practice or policymaking in all the functional areas of management and allied subjects.

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Contents

Editorial

- Role of Generative AI in Management Education and HRD 7
Radha R. Sharma

Articles

- An Econometric Analysis of the Determinants of Foreign Direct Investment: A Panel Data Analysis of Brazil and India 9
Tom Jacob, Rincy Raphael and Ajina V S
- A Systematic Review with Bibliometric Analysis on Human Resource Information System (HRIS) with Reference to Service Sector 25
Moneswari Boro and L. S. Sharma
- Influence of Big Five Personality Traits on Herding Bias: Delhi-NCR Region 41
Rohit Kaushik and Nishtha Pareek
- Impact of Working Capital Management on Profitability: A Study of the Select Indian Pharmaceutical Companies 50
Rachna Mahalwala and Girish Ahuja
- Effects of Covid-19 on Employee Engagement: A Study in the Context of Work-from-Home Practices 70
Asma Bano and Ayesha Khatun

Perspective

- Dynamics of Trade Agreements, Trade and Investment in South, Southeast and East Asia 90
Rinku Manocha

Case Study

- Assessing Quality in Ready-Mix Concrete Production: A Case Study of B. L. Kashyap and Sons Ltd 121
Anand Jaiswal, Teena Singh, Ankita and Aviral Jha

Book Review

- Ranjay Gulati, *Deep Purpose: The Heart and Soul of High-performance Companies* 132
Reviewed by Sangeeta Yadav

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Role of Generative AI in Management Education and HRD

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With rapid technological advancements, generative AI has emerged as a type of artificial intelligence (AI) that can create new text, images, music, art and videos, to name a few (techopedia) (Rouse, 2023). It has the potential to transform teaching-learning process from an early stage to higher education and to revolutionise management education by making it interactive and experiential with simulations and games. It can make education student-centric by personalising study plan based on a student's capabilities and performance level and can enable teachers to identify areas of improvement for students and to provide real-time feedback and support.

There could be many applications of generative AI in the field of management. In human resource management, emerging AI can function as a virtual trainer and provide 24/7 support to a participant to study at one's own pace. In finance, generative AI can develop financial models for forecasting market trends and help investors take informed investment decisions based on the predictions. For marketing, customised customer preferences can be generated and marketing campaigns can also be personalised for enhancing business (la Vallee, 2023).

Business schools around the globe look for introducing innovations in pedagogy and developing industry-related skills among students. In many cultural contexts, career guidance and preparing students for industry readiness for placement is one of the responsibilities of the faculty. Thus, generative AI could be used to simulate real-world business situations, the best industry practices, real-life tasks and expose students to industry practices of negotiations and sales pitches thereby enhance and transform their learning experience in the business school (Chartered Association of Business Schools; CABS, n.d.). Some countries have introduced gamification and virtual reality as in pedagogy for making sustainability-related courses more impactful. Also, some educators are considering moving from traditional assessment processes to real-time meaningful tasks and problems that require application of knowledge and skills.

However, the media is agog with news about ChatGPT and concerns and anxiety are resulting in debate among faculty, educators and educational administrators nationally and internationally about authenticity of data, academic integrity, ethics and other challenges that generative AI will bring along in the assessment of learning outcomes. There is a lack of a regulatory mechanism, and clarity about who would be responsible for monitoring it but open generative AI is offering immense opportunities to experiment and innovate and bridge the gap between academia and industry.

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An Econometric Analysis of the Determinants of Foreign Direct Investment: A Panel Data Analysis of Brazil and India

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Tom Jacob¹, Rincy Raphael² and Ajina V S³

Abstract

Foreign direct investment (FDI) has become a big source of non-debt funding in the world economy over the past 20 years. The goal of this study is to look at what makes Brazil and India attract FDI. The goal of this study is to figure out the most important reasons why FDI into India and Brazil keeps going up. The most important factors that affect FDI imports in Brazil and India are found using panel data regression analysis. The panel unit-root test, the Fisher Johansen test of cointegration, the panel vector error correction model, and the panel fully modified ordinary least squares (FMOLS) model has all been used to look at the data. In this study, FDI flows are considered as a function of India and Brazil's relative consumer price index, gross domestic product, trade openness, human capital and population. The study shows that the size of the market and the number of people in a country have the biggest positive effects on drawing FDI. Inflation and trade openness, on the other hand, have little to do with attracting FDI to these two countries. Real GDP is used to measure the size of the market, and it is a major positive predictor of FDI. This means that most investment in these countries is driven by a desire to get into the market.

Keywords

Foreign direct investment, real GDP, inflation, VECM

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Introduction

When a country has a market economy, foreign direct investment (FDI) is seen as a force that drives economic growth. Because of this, many economic studies take it into mind. Since ‘the very essence of economic development is the rapid and efficient transfer and adoption of “best practices” across borders’ (Kok et al., 2009), most of the study focuses on FDI as a key factor in economic growth and technology development. Before the First World War, global companies in the first half of the 1800s were the first ones to invest directly in other countries. But now, the amount of FDI coming into the world grows every day. The goals of FDI inflows are different from one country to the next.

Agrawal (2000) says that the main thing that determines foreign investment is the companies’ goals. Some companies want a big home or local market, while others want to get their hands on natural resources. On the other hand, some companies start new plants and buildings in the countries where they are based to cut down on production costs and make new connections with the international market. So, the amount of FDI changes based on how much money is needed. FDI is the lifeblood of international trade and a main sign of the standard of living in a country. FDI has been a big part of the process of globalisation over the last 20 years. It is seen as a way to mix economies with foreign markets as well as a way to ease financial pressures. The host country directly gains from bringing in non-debt-creating foreign capital, which leads to a rise in foreign capital resources, better economic performance, a stronger exchange rate and new jobs. There are also secondary benefits, such as the spread of modern technology, the improvement of operational and management skills, and the growth of human capital. The investor gains from having access to, among other things, a big market, skilled workers who do not cost much, tax breaks and subsidies and the ability to use natural resources. The benefits of FDI are real, but they are not automatic, and their size depends on things such as the stage of growth of the country, its ability to absorb investment, and the type of investment or area that is needed. For example, a country with few college graduates will not be able to use knowledge spillovers, and a country that is not ready for technology may not be able to use technology spillovers. In general, though, FDI has a lot of good effects on the country that receives it.

FDI has become more important and is now seen as a way to help a country’s economy grow. Countries have started changing their policies to increase FDI inflows and the economic benefits that come with them because they know how important FDI is and how good it is for them. So, almost all governments that want their economies to grow are interested in liberalising their policies, lowering restrictions, making it easier for businesses to start up, making it easier for FDI to come in, giving tax breaks and subsidies, and being more proactive. The current flow of FDI is complicated and depends on things such as the size of the company, how competitive it is, and the economic situation in both the country that sends the

money and the country that receives it. But there is no agreement on what makes a country or area attractive to foreign companies.

Studies done in Brazil and India show that the most common approach used by foreign investors is market seeking, also known as market attraction. On the other hand, these studies do not compare the countries or times. So, this article's main goal is to look at the causes of FDI in the economies of Brazil and India from 2000 to 2020. At the same time, it tries to find out what both countries have in common and what makes them different when it comes to drawing FDI.

Statement of the Problem

The biggest problem for emerging countries is getting a lot of money from outside sources. Many people think that FDI is the main way for developing countries to get access to cash, technical, managerial and organisational know-how and other tools that they would not have otherwise. Due to its importance, increasing FDI inflows is the top goal of policymakers in developing countries (Haile & Assefa, 2005; Suleiman et al., 2015). Several policy changes have led to a large increase in FDI inflows into developing countries. But these amounts have been split up in different ways, with most FDI going to poor countries. In this study, the researcher is focusing on India and Brazil, which are the two biggest and most populous countries in the world. People know that the economies of these two countries are growing quickly and that their facilities and surroundings are good. In terms of technology and facilities, these two countries' economies are getting better. So, this study tries to find out the main factors that affect FDI in these countries.

Objectives of the Study

- To examine the growth and trend of FDI in Brazil and India.
- To examine the macroeconomic factors that influence FDI in Brazil and India.

Scope and Significance of the Study

This study is mostly about FDI in India and Brazil. It compares how well FDI works in both countries. This study was chosen to learn and study more about the cross-border investments made by emerging countries and their involvement in international markets in order to affect global and economic issues. This study is very helpful for experts who want to know what factors affect FDI in fast-growing countries such as India and Brazil and how their economies and environments are different from each other. In 2022, India and Brazil will have had formal ties for 74 years. In recent years, the relationship between the two countries has become better because they have a similar view of the world, are

both committed to growth and share democratic ideals. In 2006, they made a strategic partnership, and in 2020, they agreed to an Action Plan to Strengthen the Strategic Partnership to make it stronger. Today, the two countries work together in a number of international venues, such as BRICS, IBSA, G4, G20, BASIC and the United Nations. They also meet at summits, share high-level officials and take part in high-level visits. Over the years, their trade and investments have grown, and they have worked together more on important things such as biofuels and the power sector.

As the two countries try to figure out how to live in a changing world, their similarities and similar views on multipolarity give them a unique chance to look for ways to work together more. As India celebrates 75 years of independence and Brazil marks 200, this report by the Observer Research Foundation and Fundaco Alexandre de Gusmo gives Indian and Brazilian perspectives on some of the most important issues in multilateral forums that affect both countries and their bilateral relationship. Both countries have a long and strong history of participating in conferences, where they have often made strong and long-lasting relationships with other countries. If both countries knew more about what the other was doing, they could work together to help both of their countries.

Research Methodology

This research is both analytical and empirical in character, with a particular emphasis on the dynamic interaction between FDI and its determinants.

Data Collection

This study is mostly based on facts that came from other sources. The figures come from the website globeconomy.com and cover the years 2000 to 2020. India and Brazil's FDI is the dependent variable, and economic growth, trade freedom, inflation and human capital are the independent factors.

Data Analysis

Regression analysis is used to figure out how FDI and its macroeconomic factors are related to each other. The mean, the standard deviation and the measure of difference are all ways to look at how well FDI is doing. Before running the Hausman test, both random effects and set effects are tried. The Hausman test shows which model is better. So, the Hausman test comes first. Based on the result of the Hausman test, the random or fixed effects model comes next. The Hausman test starts with the idea that the random effects model is right. Since the P value is higher than 5% (0.8720), the null hypothesis is accepted, so, the random effects model is chosen. Advanced econometric tools such as the panel unit-root test, the Fisher Johansen test of cointegration, the panel vector error correction model

(VECM), and the fully modified ordinary least squares (FMOLS) model, among others, are used to find out exactly what causes FDI in these countries.

Hypotheses of the Study

- Countries with a large market size attract more FDI.
- Inflation stability is essential for FDI inflow.
- Population is a determinant factor for FDI inflow.
- Trade openness and liberal policies lead to FDI inflow.

Review of Literature

Every day, more and more research is being done on FDI in order to figure out its causes and effects. Most people agree that FDI helps countries improve their economies by giving them access to international funds, technology, competition and better access to international markets. At the same time, FDI will boost spending and growth in the country itself. Some reviews about FDI and what makes it happen are as follows:

The study identified significant FDI determinants and provided a complete evaluation of aspects that are deemed to affect FDI attraction. The researchers identified several FDI determinants. The study's ultimate evaluation is a Synthesis of the elements driving FDI (Tocar, 2018). Market growth indicates a larger market with better possibilities. Foreign investors invest in countries with larger markets and faster economic development rates to maximise their ownership benefits (Cullen, 2002). More FDI will be attracted to a country with a stable macroeconomic position and high and sustained growth rates. GDP growth rates, the industrial production index and other growth proxies are employed (Uri et al. 2000).

Ewe-Ghee (2001) argued that GDP growth signals a higher rate of return, attracting FDI inflow and reducing FDI outflow. Ekholm et al. (2010) and Baltagi et al. (2005) conducted their study on market proximity, i.e., relationship between the size of market and FDI by using a regression model. They identified that there is a positive and significant effect of market size on FDI inflow. The productivity of a country is also a factor that influences FDI inflows. The findings of a cross-country study of panel data indicate that the impact of a country's productivity differs from one country to another (Razin & Sadka, 2007).

Decades of research have demonstrated the importance of trade in complementing FDI. MNEs prefer to invest in markets with which they are already aware. Imports of complementary, intermediate and capital items may be required. In any case, trade volume increases and trade openness is supposed to be a positive and important determinant of FDI (Holland, 1998). The ratio of export plus import divided by GDP is used to measure trade openness (Nunes et al., 2006).

In studies of economic stability, inflation is often used as an explanatory variable. Countries with rapidly inflating currencies would be unattractive to foreign investors,

signalling volatility, risk and a reduction in long-term profitability. Furthermore, an inflating currency would result in lower domestic investment and economic development. It is crucial to understand how inflation affects a country's FDI inflows. Inflation seems to have a negative effect on FDI, although this is not always the case.

Williams (2015), Ranjan and Agrawal (2011) and Tsaurai (2017) found that inflation is likely to be bad and important. On the other hand, Erdoğan and Ünver (2015) and Das (2017) think it is good and important, which goes against the economic theory. Some studies (e.g., Tampakoudis et al., 2017) say that inflation is not important.

For governments to get FDI, they need to have strong human capital. Population size is also used as a stand-in for human capital (Barro, 1990), and actual studies like the one of India (Utsav & Muhammad, 2018) find this to be important and hopeful. Nilofer (2011) looked at statistics from 1991 to 2009 to show the main economic reasons for FDI inflow and the sector-by-sector trend of FDI intake into India. The research showed that FDI flows have been unstable over the past few decades and have changed from sector to sector.

FDI intake was found to be strongly linked to the economic factors that were looked at in the study. According to the authors, it is in India's national interest to remove restrictions on stock capital investment and other things that have made it harder for India to get more foreign investment. Sahni (2013) used the ordinary least-square method for time-series data analysis to look at the trends and factors that affected the flow of FDI into India from 1992–1993 to 2008–2009. During the post-reform period, GDP, inflation and trade openness were found to be important in drawing FDI to India. However, foreign exchange reserves were not found to be an important factor in understanding FDI to India.

da Silveira et al. (2017) used a panel database for 49 industries from 1996 to 2003 to find out the many factors that affect FDI flows to the Brazilian economy. The rate of economic growth and how open the country is to trade were found to be the most important socioeconomic factors in getting foreign capital into Brazil. Costa (2002) used panel data from FDI flows in the 1990s. The finding shows that the exchange rate, wage rates, privatisations, physical distance and natural resources were all statistically significant factors that affected FDI.

Research Gap

Reviewing the literature shows that there are a lot of studies that look at the macroeconomic factors that affect the flow of FDI. But there are not many studies on the flow of FDI into India and Brazil, two emerging countries that are part of the BRICS economy. As they become world players, Brazil and India are going through big changes. Even as they become more involved in foreign affairs, they still have things in common with other poor countries. The rise of Brazil and India and their ideas about how to solve global development problems have big effects on international development strategy. In recent years, the relationship between

the two countries has got better because they have a similar view of the world, are both committed to growth, and share democratic ideals. So, the main goal of this study is to look at how macroeconomic factors affect the amount of FDI coming into two BRICS countries (India and Brazil) as a whole.

The rise of FDI in Brazil and India is shown in Table 1. The values of the numerical mean, standard deviation and coefficient of variation are also shown. It shows how FDI in Brazil and India has changed over the past 20 years. This data shows that in 2000, neither country got a lot of FDI. Brazil's trend of falling kept going in 2002 and 2003 (see Figure 1). Even though the amount of FDI coming into Brazil was going up until 2009, it went down in 2010. On the other hand, India's overall trends are both going up and down, with the exception of the years 2000 and 2004 (see Figure 2). Since 2011, there has been less FDI into Brazil. The World Investment Report 2020 from the UNCTAD, on the other hand, says that FDI imports increased by 20% from 2018 to 2019, reaching USD 72 billion. FDI stock stayed the same for two years and was worth USD 640 billion at the end of 2019. Flows to Brazil dropped by almost half, to USD 18 billion, in the first half of 2020, as the privatisation plan for 2019 stalled. But in the second half of 2020,

Table 1. Foreign Direct Investment in India and Brazil.

Year	India FDI	Brazil FDI
2000	3.58	32.99
2001	5.13	23.23
2002	5.21	16.59
2003	3.68	10.12
2004	5.43	18.18
2005	7.27	15.46
2006	20.03	19.38
2007	25.23	44.58
2008	43.41	50.72
2009	35.58	31.48
2010	27.4	82.39
2011	36.5	102.43
2012	24.0	92.57
2013	28.15	75.21
2014	34.58	87.71
2015	44.1	64.74
2016	44.46	74.29
2017	39.97	68.89
2018	42.12	78.16
2019	50.61	73.5
2020	48.25	74.55
Mean	21.11	50.64
SD	16.21	31.46
CV	59.78	62.11

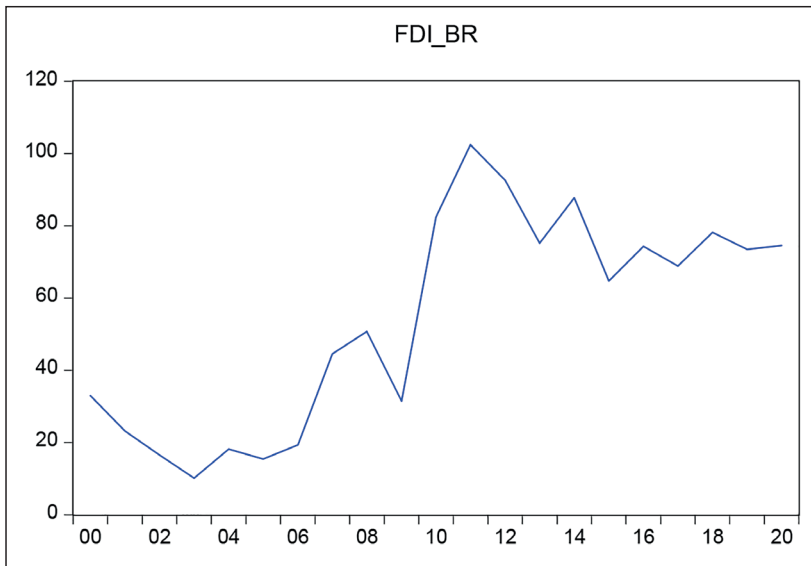


Figure 1. Flow of FDI in Brazil.

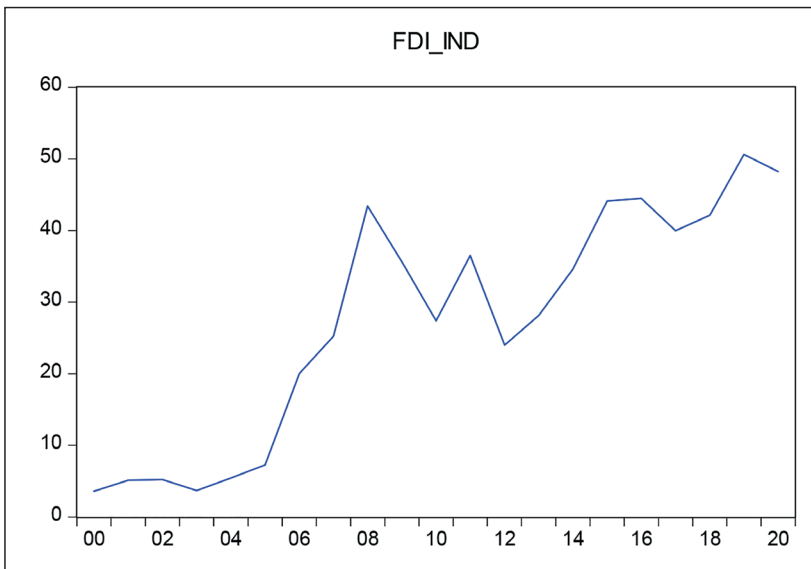


Figure 2. Flow of FDI of India.

asset sales started up again, and a new infrastructure plan was revealed. The average rise of FDI in Brazil is 50.64 and in India, it is 27.11. From this, we can tell that Brazil's average was higher. The average amount of change in a set of data is the standard deviation. Brazil's standard variation is 31.462, while India's is

16.212. The amount of risk is shown by the standard deviation. We can get the coefficient of variation by dividing the standard deviation by the mean. This number can be used to compare risks. India’s index is 59.798 and Brazil’s is 62.119. If the ratio is smaller, it means that the trade-off between risk and profit is better. So, India has less of a trade-off between risk and gain than Brazil does.

Model Specification

Based on the study of the literature and previous studies, this research is looking into a model that includes socioeconomic factors and how each country’s variables affect FDI. The researcher develops a model with the help of econometric techniques, to verify the determinants affecting the FDI in Brazil and India.

FDI = F (CPI, GDP, TO, POP, ε)
FDI = Foreign Direct Investment
CPI = Consumer Price Index
GDP = Gross Domestic Product
TO = Trade openness
POP = Population
ε = Error Term

The preceding empirical analysis demonstrates the model’s independent and dependent variables.

Empirical Results

This section illustrates the model’s variables’ integration properties using panel unit-root tests (refer to Table 2). Before proceeding with co-integration and long-run relationship of the model, test for stationarity of time series. The LLC, IPS, Fisher–ADF and PP–Fisher tests all fail. The null hypothesis that the data series is not stationary is accepted at level but rejected at first difference. That is, at first difference, these variables are stationary (1). This means that all variables in this study are *I* (1) for all countries.

Table 2. Unit-root Test Results.

Variables	Stationary
FDI	<i>I</i> (1)
GDP	<i>I</i> (1)
CPI	<i>I</i> (1)
TO	<i>I</i> (1)
POP	<i>I</i> (1)

Table 3. Johansen Fisher Panel Cointegration Test.

Series: FDI CPI GDP_P TO POP				
Trend assumption: Linear deterministic trend				
Lags interval (in first differences): 1 1				
Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)				
Hypothesised	Fisher Stat.*		Fisher Stat.*	
No. of CE(s)	(from trace test)	Prob.	(from max-eigen test)	Prob.
None	42.82	0.0000	19.36	0.0007
At most 1	26.28	0.0000	8.817	0.0658
At most 2	20.57	0.0004	8.323	0.0804
At most 3	17.25	0.0017	10.36	0.0348
At most 4	17.11	0.0018	17.11	0.0018

All factors are co-integrated at first. The next step is to examine the Johansen Fisher panel cointegration test to see if they are in the same or different order. This test is mostly used to check the long-term link, or cointegration, between FDI and macroeconomic factors in India and Brazil. At the 5% level, the real-world data show that there are two co-integrated equations (see Table 3). This shows that there is a long-term link between FDI and socioeconomic factors in India and Brazil.

VECM Model: FDI and Its Linkage with Macroeconomic Variables in India and Brazil

If there is a link between FDI and India and Brazil's financial data, the next step will be to use the VECM. It lets you figure out how things work in the short run, how they work in the long run, and how fast things change as they move towards the long-run stability (see Table 4).

The goal of the ECM is to show how quickly the economy moves from a state of short-run equilibrium to a state of long-run equilibrium. If either ECT or C (2) is negative and significant, it means that the rate of change between the short-run dynamics and the long-term equilibrium relationship is 189% per year (see Table 5). This shows that FDI and socioeconomic factors in India and Brazil are linked in a long-term way.

Table 6 shows the result of the panel regression analysis of FDI in India and Brazil. The empirical conclusion demonstrates that market size and population strength are the most important factors attracting FDI to these countries, whereas inflation and trade openness are insignificant factors. A more populated nation can have a more promising future for investors. That means human capital acquisition promotes FDI. The study reveals that, for both countries, market size is an important factor. FDI is drawn to big markets because they give foreign companies more chances to sell and make money.

Table 4. VECM Model.

Vector Error Correction Estimates					
Included observations: 36 after adjustments					
Standard errors in () and t-statistics in []					
Cointegrating Eq:		CointEq1	CointEq2		
FDI(-1)		1.000000	0.000000		
CPI(-1)		0.000000	1.000000		
GDP_P(-1)		19.67320	-0.532036		
		(5.36380)	(0.39277)		
		[3.66777]	[-1.35457]		
TO(-1)		7.524683	-0.290712		
		(4.39380)	(0.32174)		
		[1.71257]	[-0.90356]		
POP(-1)		-0.005580	0.019846		
		(0.08324)	(0.00610)		
		[-0.06703]	[3.25594]		
C		-383.0727	-8.435346		
Error Correction:					
CointEq1	D(FDI)	D(CPI)	D(GDP_P)	D(TO)	D(POP)
	-0.070645	0.016547	-0.041757	-0.011911	-0.020066
	(0.06369)	(0.01119)	(0.01049)	(0.00975)	(0.03621)
	[-1.10915]	[1.47918]	[-3.97957]	[-1.22141]	[-0.55413]
CointEq2	-1.895598	-0.324123	0.092404	-0.059137	-1.120906
	(0.95515)	(0.16776)	(0.15735)	(0.14624)	(0.54303)
	[-1.98461]	[-1.93209]	[0.58724]	[-0.40438]	[-2.06417]
D(FDI(-1))	-0.294238	0.002527	0.040917	-0.001798	-0.063394
	(0.20587)	(0.03616)	(0.03392)	(0.03152)	(0.11704)
	[-1.42923]	[0.06988]	[1.20642]	[-0.05706]	[-0.54163]
D(FDI(-2))	-0.181864	0.001013	0.029960	-0.007384	-0.029186
	(0.19882)	(0.03492)	(0.03275)	(0.03044)	(0.11304)
	[-0.91471]	[0.02900]	[0.91467]	[-0.24255]	[-0.25820]

(Table 4 continued)

(Table 4 continued)

Vector Error Correction Estimates					
D(CPI(-1))	0.925041 (1.09813) [0.84238] 0.359204 (0.99427) [0.36127] -0.222455 (1.16033) [-0.19172] -0.287389 (0.99223) [0.28964] -2.693645 (1.18669) [-2.26988] -3.075990 (1.22106) [-2.51912] 5.495755 (27.0009) [0.20354] -2.655131 (27.3216) [-0.09718] -18.45632 (11.8544) [-1.55692]	-0.102100 (0.19287) [-0.52937] -0.179056 (0.17463) [-1.02535] -0.390867 (0.20379) [-1.91795] -0.561146 (0.17427) [-3.21998] 0.134575 (0.20842) [0.64568] 0.128637 (0.21446) [0.59982] -1.119840 (4.74230) [-0.23614] 1.259934 (4.79863) [0.26256] -1.683421 (2.08204) [-0.80854]	-0.137761 (0.18091) [-0.76149] -0.078229 (0.16380) [-0.47759] -0.095501 (0.19116) [-0.49960] -0.112970 (0.16346) [-0.69110] -0.248956 (0.19550) [-1.27344] -0.047507 (0.20116) [-0.23617] -2.096383 (4.44820) [-0.47129] 2.499789 (4.50104) [0.55538] -4.101898 (1.95293) [-2.10039]	0.098758 (0.16813) [0.58739] 0.045742 (0.15223) [0.30048] 0.317917 (0.17765) [1.78954] 0.237734 (0.15192) [1.56490] -0.271458 (0.18169) [-1.49408] -0.122847 (0.18695) [-0.65711] 3.487845 (4.13399) [0.84370] -3.218827 (4.18310) [-0.76948] -1.620842 (1.81498) [-0.89304]	0.103012 (0.62432) [0.16500] -0.259746 (0.56527) [-0.45950] 0.097730 (0.65968) [0.14815] 0.152336 (0.56411) [0.27005] -0.456276 (0.67467) [-0.67630] 0.100334 (0.69421) [0.14453] -23.40928 (15.3508) [-1.52496] 25.24212 (15.5331) [1.62505] -12.39861 (6.73957) [-1.83967]
D(CPI(-2))					
D(GDP_P(-1))					
D(GDP_P(-2))					
D(TO(-1))					
D(TO(-2))					
D(POP(-1))					
D(POP(-2))					
C					

R-squared	0.390011	0.470593	0.605836	0.293348	0.610760
Adj. R-squared	0.071757	0.194381	0.400186	-0.075340	0.407678
Sum sq. resids	3,868.760	119.3418	104.9988	90.68891	1,250.479
S.E. equation	12.96946	2.277888	2.136625	1.985698	7.373511
F-statistic	1.225469	1.703738	2.945949	0.795653	3.007458
Log likelihood	-135.2709	-72.65430	-70.34953	-67.71228	-114.9415
Akaike AIC	8.237270	4.758572	4.630529	4.484015	7.107863
Schwarz SC	8.809096	5.330398	5.202355	5.055842	7.679689
Mean dependent	2.805556	-0.061111	-0.009722	0.116667	7.659444
S.D. dependent	13.46142	2.537859	2.758797	1.914874	9.580661
Determinant resid covariance (dof adj.)		523.259.2			
Determinant resid covariance		55,698.50			
Log likelihood		-452.1077			
Akaike information criterion		29.28376			
Schwarz criterion		32.58276			
Number of coefficients		75			

VECM Estimated Model

$$D(FDI) = C(1)*(FDI(-1) + 19.6732028598*GDP_P(-1) + 7.5246833215*TO(-1) - 0.00557955130047*POP(-1) - 383.072652878) + C(2)*(CPI(-1) - 0.532036209339*GDP_P(-1) - 0.290712345342*TO(-1) + 0.0198464419618*POP(-1) - 8.43534575622) + C(3)*D(FDI(-1)) + C(4)*D(FDI(-2)) + C(5)*D(CPI(-1)) + C(6)*D(CPI(-2)) + C(7)*D(GDP_P(-1)) + C(8)*D(GDP_P(-2)) + C(9)*D(TO(-1)) + C(10)*D(TO(-2)) + C(11)*D(POP(-1)) + C(12)*D(POP(-2)) + C(13).$$

Table 5. Estimates of Error Correction Term.

System: UNTITLED

Estimation Method: Least Squares

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	−0.070645	0.063693	−1.109154	0.2697
C(2)	−1.895598	0.955150	−1.984608	0.0496
C(3)	−0.294238	0.205872	−1.429229	0.1556
C(4)	−0.181864	0.198821	−0.914713	0.3623
C(5)	0.925041	1.098130	0.842378	0.4013
C(6)	0.359204	0.994275	0.361272	0.7186
C(7)	−0.222455	1.160326	−0.191718	0.8483
C(8)	−0.287389	0.992229	−0.289640	0.7726
C(9)	−2.693645	1.186689	−2.269882	0.0251
C(10)	−3.075990	1.221059	−2.519116	0.0131
C(11)	5.495755	27.00092	0.203540	0.8391
C(12)	−2.655131	27.32165	−0.097180	0.9228
C(13)	−18.45632	11.85440	−1.556917	0.1222

Table 6. Panel Regression Analysis of FDI in India and Brazil.

Dependent Variable: FDI

Method: Panel fully modified least squares (FMOLS)

Coefficient covariance computed using default method

Long-run covariance estimates (Bartlett kernel, Newey-West fixed bandwidth)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	−3.326170	2.111642	−1.575158	0.1245
GDP_P	−3.878721	2.217215	−1.749366	0.0893
TO	0.488941	2.050399	0.238461	0.8130
POP	0.190353	0.080978	2.350682	0.0247
R-squared	0.443252	Mean-dependent var		41.88225
Adjusted R-squared	0.361378	S.D.-dependent var		27.33435
S.E. of regression	21.84394	Sum-squared resid		16,223.36
Long-run variance	789.2687			

Conclusion

The examination of FDI drivers in Brazil and India revealed numerous similarities in FDI attraction. Both countries have enacted macroeconomic policies to stabilise the economy, including trade liberalisation, FDI-friendly legislation and the privatisation of public firms. Until the crises and recessions, both countries had similar patterns in attracting international investment. The empirical conclusion reveals that foreign investment interest in Brazil and India is linked to economic and population growth. Population and economic growth positively affect FDI. Other macroeconomic variables do not significantly affect FDI in India and Brazil.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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A Systematic Review with Bibliometric Analysis on Human Resource Information System (HRIS) with Reference to Service Sector

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Abstract

The human resource information system (HRIS) has played a significant role in promoting effective organisational learning, increased productivity, and sustainability during a time of demanding and evolving human resource management practices, as well as the development of information technology. This study combines a bibliometric analysis and a systematic literature review (SLR) to examine the topic. The systematic review was conducted in a methodical manner, involving the collection of available materials and their evaluation based on established criteria. The study focuses on articles published between 2001 and 2021, specifically from the Scopus database. To identify relevant articles, specific keywords such as 'hris', 'hrms', 'human resource information system' and 'human resource management system' were used. A total of 57 articles were included for further study based on predetermined inclusion and exclusion criteria. The purpose of this review-based work is to provide a qualitative understanding of the overall evolutionary trend, knowledge structure and literature gaps related to HRIS. It also suggests potential areas for future research, with a particular emphasis on the service sector, utilising open-source software. The findings highlight the benefits of implementing HRIS in the service sector and offer a comprehensive overview of the advancements and diversification of publications and research in this field. Additionally, the study provides scholars and practitioners with valuable insights to implement HRIS in various sustainable sectors.

Keywords

Human resource information system, human resource, systematic literature review, bibliometric analysis, service sector

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Introduction

The human resource information system (HRIS) is a concept that involves effectively managing human resource management (HRM) activities and applications through the use of information technology (IT) development and features (Kovach et al., 2002). HRIS has gained increasing importance in improving communication procedures (Volkmer, 1999). Essentially, HRIS can be defined as a technology-based system that acquires, stores, manipulates, analyses, retrieves and distributes information relevant to an organisation's human resources. It aims to meet users' information needs and enhance productivity (Tannenbaum, 1990). The nature of HRIS varies depending on the company's size, being more informal in small firms and more structured in large enterprises (Lengnick-Hall & Moritz, 2003). The rapid advancement of information and communication technology (ICT) in the past two decades has accelerated the adoption and usage of electronic human resource management (e-HRM) (Strohmeier, 2007). The integration of technology in HR has greatly impacted HR management operations, involving executives, managers and employees (Mathis & Jackson, 2010). Previously, information systems were primarily used to standardise data, but recent advancements in HRIS have led to reduced administrative costs and the introduction of various new applications, thereby making HR roles less independent and empowering the entire HR department (Alleyne et al., 2007).

HRIS Implementation in Different Service Sectors

Kirishna and Meena (2010) recognised the key functional areas in which ICT is used for information management in higher education institutions. The current degree of utilisation in higher education institutions suggests clear incorporation of ICT being used for managerial or information-based administration. In the late 1990s, Ball (2001) conducted research revealing that 60% of Fortune 500 companies utilised HRIS to assist with their daily HRM tasks. It was found that organisations using HRIS gained a competitive advantage over those that did not (Kavanagh & Thite, 2009). Rawat (2008) further suggests that modern higher education institutions face a significant challenge of improving learning environments while simultaneously reducing administrative operational costs.

As a consequence, employing an HRIS at a university enables for the most efficient use of resources, as well as increased speed, interoperability, upgradeability, accessibility, data integrity, privacy and security. The organisational element is concerned with how supportive the organisation is of the employees involved in the adoption of new systems. The size of the company is a key factor in deciding whether or not to use HRIS (DeLone, 1981). Small and medium-sized enterprises encounter a difficult issue when it comes to adopting IT systems due to limited financial resources and high initial setup expenses (Dixon et al., 2002; Poon & Swatman, 1999).

Literature Review

The literature presents various analyses on the utilisation of HRIS, with two distinct extremes of usage, as noted by Ball (2001). Kovach and Cathcart (1999) and Kovach et al. (2002) suggest that HRIS data can be employed for administrative purposes to save time and money. Additionally, they argue that HRIS data has the potential for analytical decision support. Ngai and Wat (2006) have discussed several other relevant studies on the implementation of HRIS. For instance, Martinson (1994) conducted a comparative analysis of IT usage levels in Canada and Hong Kong, finding that HRIS was less frequently utilised in Hong Kong compared to Canada, while IT for HRM was more frequently used in Hong Kong than in Canada.

In a survey conducted by Ball (2001), the utilisation of HRIS in smaller businesses in the United Kingdom was examined, revealing that these businesses are less inclined to adopt HRIS. Similarly, Burbach and Dundon (2005) conducted a study in the Republic of Ireland, focusing on the strategic capabilities of HRIS in enhancing people management practices across 520 enterprises. They observed that large foreign-owned businesses are more likely than smaller Irish-owned businesses to utilise HRIS. They also revealed that HRIS systems are usually used for administrative decisions rather than strategic ones. Chugh (2014) studied the role of HRIS in an educational organisation. The author surveyed around 250 full-time employees and 400 casual employees suggesting HRIS may help to stay competitive and adaptable if an organisation use them in the right way, but HR without people is impossible to imagine. HR's nature, as a result, is to be able to maintain a constant balance of people and technology in order to continue to assist and drive an organisation forward.

Troshani et al. (2011) conducted a study to identify the factors affecting the adoption of HRIS in public sector organisations, specifically focusing on qualitative findings from 16 interviews conducted across 11 Australian public sector organisations. They utilised the technology–organisation–environment model as an analytical framework. Their study concluded that achieving a total organisational fit between the adopted HRIS and business processes can be challenging, particularly when considering standardisation trends. This implies that postadoption vendor assistance should be negotiated to avoid costly adaptations. Additionally, environmental variables, such as regulatory compliance, were found to have a significant impact on the success of HRIS adoption by creating a sense of urgency in adoption plans.

In a study by Krishnan and Singh (2006), they examined the challenges and barriers faced by nine Indian firms during the implementation and management of HRIS. The main difficulties identified were a lack of HRIS knowledge within HR departments and insufficient attention given to HR in the overall business context. Another concern highlighted was the need for collaboration across various roles and divisions within the company to effectively implement HRIS.

Research Objectives

The primary purpose of this study is to look into HRIS use as well as its implications that might help the service sector perform better. The research aims to fulfil the following objectives in order to reach this goal:

1. To examine the existing literature on HRIS its implementation and implication, particularly in the service sector since 2001 to 2021.
2. To analyse results for the retrieved documents on HRIS with reference to the service sector.
3. To provide insights into the productivity and collaboration patterns of researchers, documents, keywords and countries.

Methodology

The current research is an amalgamation of systematic literature review (SLR) and bibliometric analysis. SLR is used in the study because the procedure it involves is systematic, reproducible, transparent and iterative. Electronic databases are becoming more widely available, making it simpler for academics to conduct systematic research in a timely way. Therefore, SLR is conducted strictly following the PRISMA statement, that is, PRISMA checklist and flow diagram. The PRISMA declaration also guarantees the research's accuracy and completeness (Mother et al., 2010). In the present study, for new systematic reviews, the PRISMA 2020 flow diagram is utilised, which solely includes database and registry searches.

Bibliometric analysis employs the frequency of article citations by other publications to establish connections between research articles and topics. According to Garfield (1979), bibliometric analysis is an objective and quantitative approach to assess the intellectual development of a scientific field of study. In this particular study, the researchers utilise VOSviewer, a tool for constructing and visualising bibliometric networks. VOSviewer, developed by Van Eck and Waltman (2009), is a comprehensive bibliometric analysis tool that leverages visualisation of similarities (VOS) technology. It offers a notable advantage by integrating diverse data from various domains based on their similarity and relevance.

The summarised results of the research examined are presented in Table 1. Subsequent to Table 1, the following section provides in-depth information about the articles that were analysed.

PRISMA Statement

The PRISMA flow chart depicts how data goes through the stages of a systematic review. It displays the total number of records identified, as well as how many were included and how many were excluded, as well as the reasons for exclusions. Figure 1 shows the flow of information, that is, records included for further study and records excluded from the study.

Table I. Data Retrieval Process.

Year	Database	Search String	Language	Document Type
2001–2021	Scopus	'HRIS' OR 'HRMS' OR 'Human Resource Information System' OR 'Human Resource Management System'	English	Article Conference paper Review article Book chapter

Source: Adapted from the study.

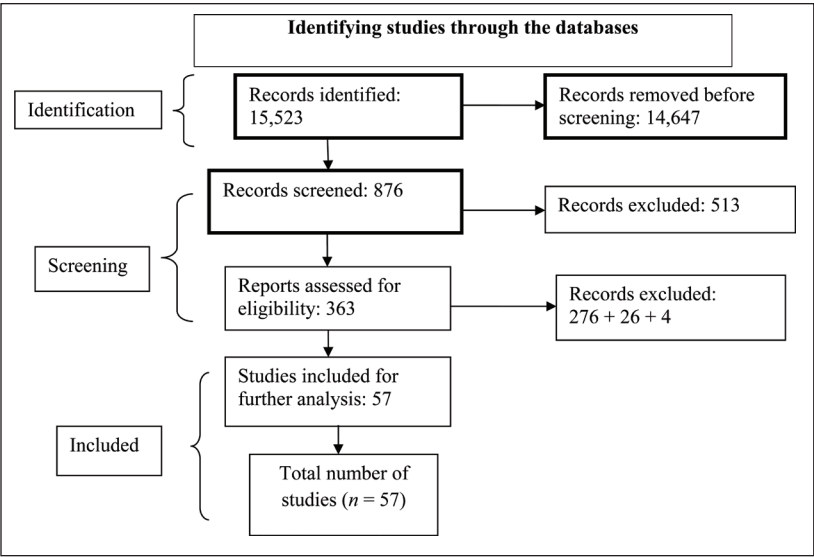


Figure I. Flow of Information (Inclusion and Exclusion Criteria).

Source: PRISMA statement (flow diagram); Moher et al. (2010).

Selection Criteria

The papers must meet the following criteria: the title, keywords section or abstract which must contain all keywords and the study must be published in a scientific peer-reviewed publication. Articles, conference papers, book chapters and review articles are under inclusion criteria. Book chapters were also included because in comparison to a journal article, a book chapter frequently gives the author more freedom and latitude to combine concepts and theories and present them in novel ways (Bhosale, 2022; Rene, 2021). These publications were not included in the final analysis. Articles that were not full text and did not fall under the purview of the current investigation were also excluded from further analysis and non-English publications are also among the exclusion criteria.

It is important to establish the scope of the study and to choose suitable keywords before beginning a database search. The search string 'hris' OR 'hrms' OR 'human resource information system' OR 'human resource management system' was used to conduct a literature search in the Scopus database. Total 15,523 documents were retrieved where 14,647 documents were excluded from the subject areas—medicine, biochemistry, genetics and molecular biology, chemistry, environmental science, agricultural and biological sciences, pharmacology, toxicology and pharmaceuticals, mathematics, materials science, nursing, chemical engineering, health professions, earth and planetary sciences, physics and astronomy, neuroscience, energy, immunology and microbiology, veterinary, dentistry and undefined. Next, 876 documents were screened from where conference reviews, data papers, books, editorials, letters, notes, short surveys, erratum and retracted counting total of 174 and documents which are out of the scope (339) were excluded resulting in 363 documents. In the screening stage, it was found that 276 documents were not accessible or not available as full text, 26 documents were found to be duplicate, that is, repeated and 4 documents are still in press. Therefore, total 57 documents were included for further study.

Objective 1: To examine the existing literature on HRIS its implementation and implication, particularly in the service sector.

An organisation in today's world has several reasons for selecting HRIS. As per comparehris.com (2012), some of the significant reasons for opting for HRIS include effective time management, the creation of high-quality reports, streamlined recruitment and improved organisational development. The implementation and adoption of HRIS are not restricted to commercial enterprises only, with researchers exploring its usage and advantages in fields such as the military, hotels and restaurants, aviation industry, educational institutions, hospitals, IT industries and financial institutions in the future which are included in service sector for the present study.

Table 2 displays the authors who have made contributions, along with their corresponding findings.

Objective 2: To analyse results for the retrieved documents on HRIS with reference to the service sector.

A SLR typically includes information about the year of publication, document type and subject area of the studies included in the review. The year of publication refers to the year in which the study was published, which can give insight into the current state of research on a particular topic. Document type can include articles, books, conference papers and other types of academic publications. Subject area refers to the field of study that the research focuses on, such as psychology, social science or medicine etc. These factors can help readers understand the scope of the literature review and the relevance of the studies included.

Figures 2–5 show information about the documents retrieved from Scopus database.

Table 2. Authors and Their Findings.

Al-Dmour (2020)	The use of HRIS in the hospitality sector had a significant positive influence on both employee performance and work engagement. Work engagement partially acted as a mediator between HRIS utilisation and employee performance.
Phahlane and Kekwaletswe (2017)	The significance of HRIS in organisations cannot be underestimated as these systems make HRM processes easier, effective, faster and more affordable. Hence, it is crucial to comprehend how organisations adopt and use such systems. A novel, comprehensive approach to understanding information systems in organisations is to simultaneously examine both adoption and usage and how adoption impacts usage.
Al-Khowaiter et al. (2014)	In Saudi Arabian public sector organisations, the authors validated their HRIS model by integrating three IS models: the Unified Theory of Acceptance, TAM model of technology adoption and the original DeLone and McLean IS success model. Instead of assessing the impact of social pressure on the success of HRIS in public sector organisations, the authors employed it to evaluate the intention to use or adopt HRIS. The success of HRIS adoption, as defined by DeLone and McLean, is measured based on its contribution to stakeholder success.
Troshani et al. (2011)	The adoption of HRIS was found to be greatly influenced by management commitment, human capabilities and environmental factors, which encompass regulatory compliance.
Wiblen et al. (2010)	The effects of technology on talent management are shaped by both individual choices and the social environment of the company. To fully comprehend electronic human resources (E-HR) and talent management, it is crucial to take into account both tangible and intangible factors. Given the rising competition for skilled workers, companies can enhance their talent management through the use of HR information systems (HRIS) and access to thorough information, allowing them to allocate resources more strategically.
Ying et al. (2009)	By utilising HRMS for information management, enterprises can benefit from increased efficiency, reduced repetitive work, lower management costs and elevated management standards.
Hussain et al. (2007)	There were minimal variations in the usage of HRIS between small and large companies. Additionally, the adoption of HRIS has improved the professional status of HR professionals.
Tansley and Newell (2007)	HRIS development involves a temporary, multidisciplinary team working together in an intensive intellectual practice, making it essential to set a clear agenda for future action.
Emilio (2007)	The internal factors of the company, specifically their HRIS implementation capability and the strategic significance of HRIS, play a crucial role in deciding whether to outsource or maintain the function in-house. The company's superior capability is essential in ensuring cost-effective and efficient HRIS implementation, while also obtaining a customised application that aligns with their requirements. This capability becomes a critical factor in determining decisions regarding the sourcing of information systems (IS). The company's ability to outperform IT suppliers hinges on the accumulation of knowledge from previous HRIS implementations and the benefits of effective communication and knowledge transfer facilitated by the close relationship between IS and HR employees.
Ngai and Wat (2006)	The primary utilisation of HRIS was focused on general information and payroll services. The implementation of HRIS resulted in notable advantages such as swift information retrieval, enhanced data management, reduced errors and heightened customer satisfaction. However, the main obstacles encountered in implementing HRIS were insufficient financial support, a lack of expertise in information technology and inadequate commitment from top management.
Ball (2001)	The size of an organisation determines whether it has an HRIS and which modules it adopts. Smaller organisations tend to choose low-cost options and in-house development to minimise risk. Smaller organisations prioritise cost and risk reduction when selecting HRIS, which is consistent with earlier surveys. The study supports the idea that smaller firms tend to hold only basic and relevant information in their HRIS, which is consistent with earlier research.

Explanation: In Figure 4, it is highlighted that all the 57 documents are open access which are available as full text. The blank indicates that there were documents with undefined open-access type. The above data show the count of years in which publication of article occurred. Figure 2 consists of 20 different years, starting from 2001 and ending in 2021, and the corresponding count of occurrences for each year. The highest count of occurrences was in 2007, with a total of nine publications, while the lowest was in 2001, 2002, 2019 and 2021, each having only one publication. The total number of publications recorded for all the years is 57.

Figure 3 shows a breakdown of the document types and their corresponding counts in a collection of 57 documents. The four types of documents identified in the data are articles, book chapters, conference papers and reviews. Out of the 57 documents, articles were the most common type, with a total count of 32. Conference papers came in second place, with 17 instances, followed by book chapters and reviews, with counts of 4 each.

Figure 5 shows the subject area with the highest count among the subject area is Business, Management and Accounting with a total of 38 documents. Following that, computer science has 14 documents, while engineering has only one document. Multidisciplinary and social sciences both have two documents each. In total, there are 57 documents across all subject areas. This information suggests that there is a greater emphasis on business, management and accounting than other fields, such as computer science and engineering. It is important to note, however, that these data may not reflect the entire range of subjects offered in academic institutions or other settings, as it is based on a limited sample.

Objective 3: To provide insights into the productivity and collaboration patterns of researchers, documents, keywords and countries.

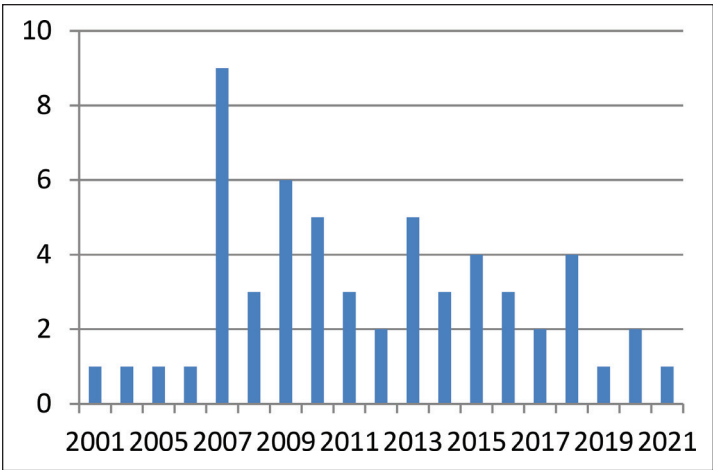


Figure 2. Publication Per Year.

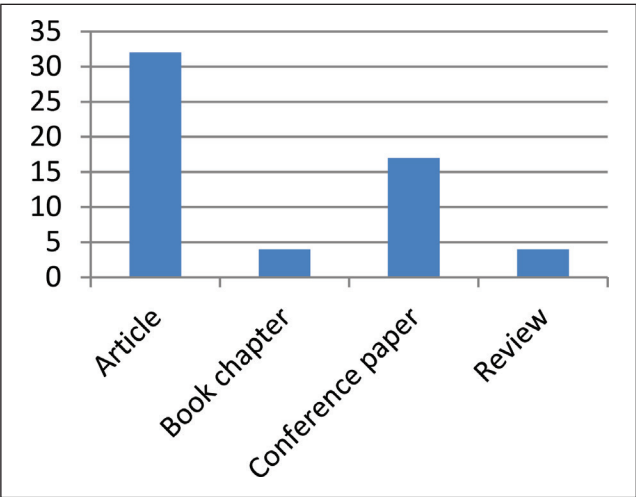


Figure 3. Document Type.

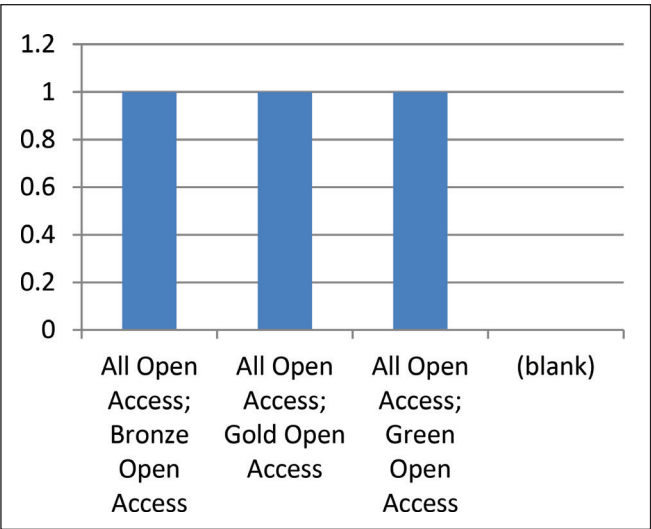


Figure 4. Open Access Type.

Studying the productivity and collaboration patterns of researchers is crucial to understanding the dynamics of academic research. To gain insights into these patterns, one can analyse various factors such as the number of documents produced by researchers, the keywords they use in their work and the countries they are affiliated with. By examining these factors, researchers and institutions can identify

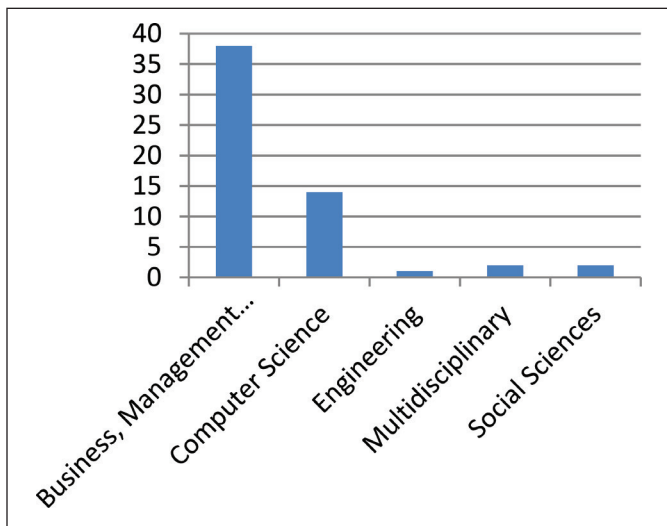


Figure 5. Subject Area.

Source: Scopus.

trends and areas of collaboration and make informed decisions about how to allocate resources and support ongoing research efforts. Ultimately, understanding the productivity and collaboration patterns of researchers is essential for driving innovation and advancing knowledge in a wide range of fields.

Figure 6 presents the frequency of occurrence and total link strength for various keywords. HRIS is the most frequently occurring keyword, with 12 occurrences and total link strength of 14. HRIS and HRM both have 10 occurrences, with total link strengths of 16 and 18, respectively. Adoption, information systems and IT have 3–5 occurrences and total link strengths of 6–12. e-HRM, HRIS adoption, HRIS applications, HRIS, social influence, technology acceptance model, technology adoption and user satisfaction all have 2–3 occurrences and total link strengths of 1–7. Jordan and organisational performance have two occurrences each, while is implementation has two occurrences and a total link strength of one. Finally, HRIS has two occurrences and total link strength of three.

Figure 4 displays the number of documents, citations and total link strength for various countries. The United Kingdom has the highest number of documents (7) and citations (313), with total link strength of 3. Jordan comes in second with 6 documents and 49 citations, followed by Malaysia and Saudi Arabia with 3 documents and 14 citations each. The United States has 7 documents and 248 citations but has lower total link strength of 1. Australia has 2 documents and 52 citations, while China, Germany, India, Indonesia, Kuwait, the Netherlands and South Africa have 2–10 documents and up to 55 citations, but none of them has any total link strength.

The data presented in Figure 8 show the count of countries included in the dataset. Among the 55 countries, the United States has the highest number of

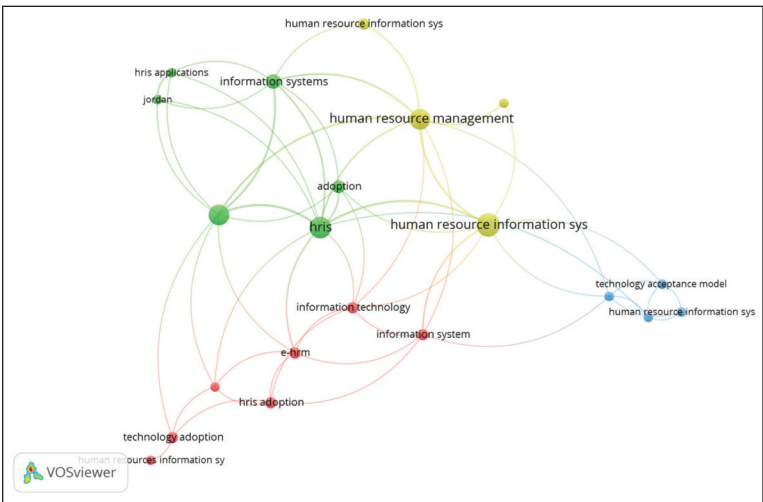


Figure 6. Co-occurrence of All Keywords.

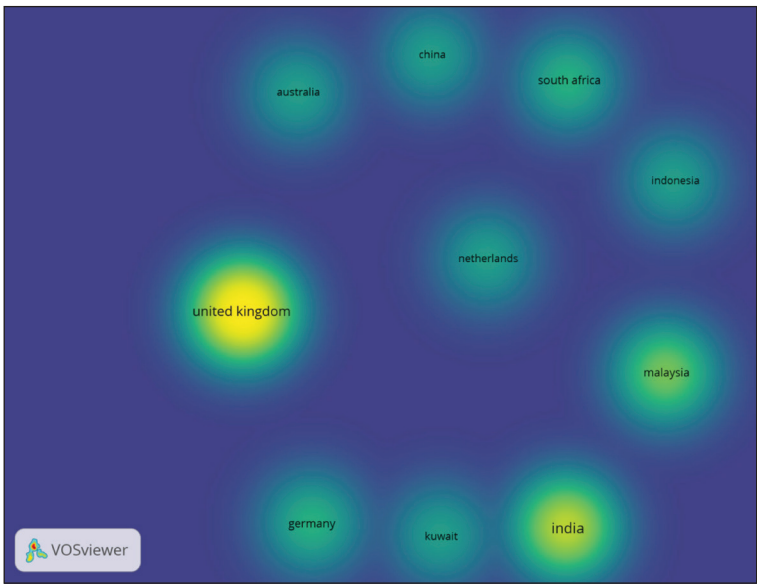


Figure 7. Co-authorship of Countries.

publications, with a total of 9. This is followed by India, with 6 publications and the United Kingdom with 7. China and Malaysia each have four publications, while there are two publications each from Australia, Indonesia, Jordan, Saudi Arabia, South Africa and Thailand. There is one publication each from Bangladesh, Brazil, Germany, Hong Kong, Iraq, Italy, Kuwait, Pakistan, Singapore, Spain, Turkey, United Arab Emirates and undefined (State). It is worth noting that there

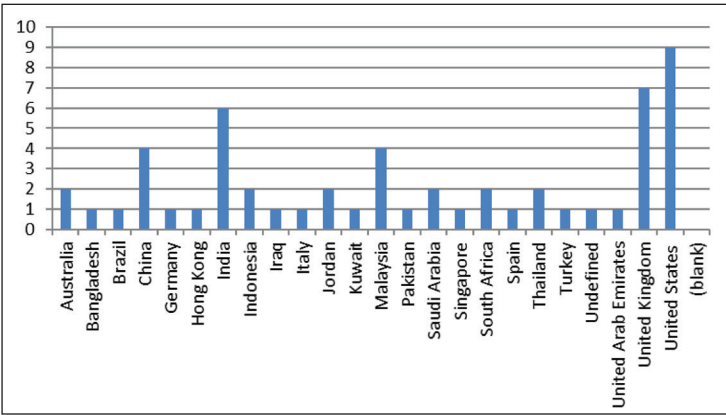


Figure 8. Publication by Country.

is a blank entry, which indicates undefined. Overall, the information provides insight into the geographic distribution of publication of articles on HRIS especially in service sector, indicating a diverse range of countries represented in the dataset.

Discussion

HRIS is the most frequently occurring keyword that can be read in most of the articles and can be concluded that it has brought about positive changes in the competitive edge and management practices of an organisation. Besides enhancing the functioning of the HR department, it has transformed the gathering of important data and its transformation into information that can enhance the quality of decision-making. Furthermore, HRIS has ensured the prompt delivery of HR services, which leads to employee satisfaction. Along with HRIS HRM, adoption, information systems and IT are mostly occurring keywords highlighted in Ngai and Wat (2006), Hussain et al. (2007), Al-Dmour and Al-Zu’bi (2014) and Lippert and Swiercz (2005).

For an organisation to achieve its goals and objectives, operate efficiently and attain success, it is crucial to adopt IT (Tuteja et al., 2019). The collection of articles reviewed in this analysis provides insight into the impact of HRIS on organisations. The findings show that most HR practices influence the adoption and implementation of HRIS in service sectors, where the HR department regards HRIS as a vital tool to enhance their value and improve internal processes. Additionally, management commitment, human capability and regulatory compliance are essential factors that drive the success of HRIS adoption. The use of HRIS in organisations leads to greater efficiency, reduced repetitive work and lower management costs. However, insufficient financial support, lack of IT expertise and limited commitment from top management are significant barriers to HRIS implementation.

The data also highlight a greater emphasis on business, management and accounting than other subject areas. Ultimately, organisations that can implement HRIS cheaper and faster while obtaining an application that better suit their needs tend to outperform IT suppliers. These insights provide a comprehensive understanding of the role and impact of HRIS in organisations, highlighting the need for strategic management and effective adoption practices to improve efficiency and performance.

Conclusion

The study examines human resource technology, that is, HRIS that can enhance human resource practices and improve its productivity and performance in service sectors. The use of computer systems and information technologies in service sectors can provide numerous benefits, including cost reduction, time-saving and reducing work stress. An HRIS should be capable of collecting typical HR information and providing analysis of these data. This can assist a service sector in effectively implementing its human resource plans.

Limitations of the Study

The study's shortcomings are mostly reflective of the inadequacies in the reports evaluated. The information used in this study was confined to articles, conference papers, book chapters and review articles published in Scopus database only. The research is based on an existing HRIS scenario, which may not be able to keep up with rapid technological advancements. There is a probability that we have missed some studies that were beyond our accessibility. Another limitation is that the records are limited to the publication year 2001–2021, articles published before 2001 were accessible online but the online analytical processing was electronically poor. Relevant studies may have been ignored since most of the research on the topic of HRIS was found to be distributed across several disciplines while scanning the related studies. The study area is confined to the service sector only which does not highlight the implication of other areas.

Declaration of Conflicting Interests

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Influence of Big Five Personality Traits on Herding Bias: Delhi-NCR Region

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Abstract

Herding is a phenomenon which has become a matter of curiosity among researchers. As herding amplifies the reaction of the retail investors to the developments in the stock market, and researchers are finding an answer to this problem in the personality traits of the investors. With a sample size of 100 respondents, the research took place in Delhi-NCR. Data collection took place with the help of a structured questionnaire. In this process, factor analysis was used to identify key variables, and multiple regression test was conducted to ascertain the association between the two variables. The study concluded that agreeableness and neuroticism were the personality traits which were highly vulnerable to herding bias. The findings of the study were that neuroticism and agreeableness are the two personality traits which are highly vulnerable to the problem of herding in stock market, whereas other personality traits did not show any significant relation with herding bias. The research will be immensely beneficial for the research advisors to develop plans in accordance with personality traits of the upcoming investors to save them from the fluctuations in the stock market.

Keywords

Delhi-NCR, herding, multiple regression, personality traits

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Introduction

Developments in the stock market have always been perplexing and yet attracted people from all walks of life to earn additional returns on their investments.

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The task of understanding the behaviour of retail investors becomes tedious with the application of traditional theories of finance as it presumes investors to be rational.

To address this lacunae behavioural finance as a separate discipline evolved to understand the behavioural facets of investors to find the root cause of their irrational decisions and hence has been relied upon by experts to delve deeper into the matters of investing pattern of retail investors (Barnewall, 1987; Chang, 2008; Kumar & Goyal, 2015).

Herding bias is another important bias which affects the decision-making of the investors and pushes them towards irrationality. During the herding bias investors instead of using their calculations, simply follows others in their footsteps (Blythe, 2013; Borghans, 2008; Clark-Murphy & Soutar, 2004; Keynes, 1930; Kumar & Goyal, 2015).

Personality is another important part of our psychology and acts as a motivator to propel investors to act in a certain way and germinates inclination in them to invest in a particular pattern and resulting in exhibition of different biases while investing. Manu's previous studies have found cause and effect relations between the two variables (Kumar & Goyal, 2015; Liang & Kelson, 2018).

As the Indian economy is counted among the fastest-growing economies, analysing the equation between the two variables assumes even more importance.

Literature Review: Herding Behaviour

Herding bias is another feature that has been primarily tracked by many experts to understand the behaviour and actions of investors facing this bias, as the investors under the influence of herding bias tend to follow other people. Furthermore, herding bias is mainly held responsible for creating artificial bubbles in the market and heavily swayed the investors' decisions in those turbulent phases (Chiang et al., 2013; Lakshman et al., 2016; Nofsinger, 1999; Vo & Phan, 2016).

Previous studies have indicated the prevalence of herding bias in advanced as well as emerging or developing economies but some notable differences emerged in relation to Chinese and Indian investors, Chinese investors usually got influenced by herding bias during a downward spiral in the market, whereas Indian people usually exhibit herding bias during the bullish trend in the market as per the previous studies (Fama, 1970; Guney et al., 2017; Lao & Singh, 2011).

Many reasons can be cited for the prevalence of herding bias in the market usually people behave differently in relation to any piece of information and sometimes they purposely follow other people in terms of investment (Economou et al., 2018).

Personality Traits and Linkages with Investment Decisions

Human beings are known to have different mindsets and personalities as well, this difference of opinion usually results in different approaches towards investment.

Personality in this way leaves a deep imprint on the investing style of any person. Previous studies have always found linkages between personality traits and their usual reaction to the movements in the stock market. However, past studies were mostly focused on correlating personality traits with portfolio decisions but less on proclivity towards different biases (Sreedevi & Chitra, 2011).

In the behavioural finance domain, to understand or carry out research in the area of personality traits, the theory of Big Five personality traits has gained a lot of credibility among the researchers, according to this theory personalities are divided among the following five categories, namely, extraversion, neuroticism, openness, conscientiousness and agreeableness (Costa & Mcrae, 1992; Mayfield et al., 2008).

Many previous studies have relied upon the Big Five personality model to carry out their research studies and their results have been documented to understand the relation between personality traits and different variables, it also highlights the estimating of the impact of personality traits (Sadi et al., 2008).

Hypothesis Development

The study strives to explore the relationship between Big Five personality traits and herding bias in the investment behaviour of Indian investors. The following hypothesis were framed to guide the study:

- H_1 : Herding bias is significantly impacted by neuroticism.
- H_2 : Herding bias is significantly impacted by extraversion.
- H_3 : Herding bias is significantly impacted by openness.
- H_4 : Herding bias is significantly impacted by agreeableness.
- H_5 : Herding bias is significantly impacted by conscientiousness.

Methodology

Questionnaire

This study employed a structured questionnaire to collect data pertaining to behavioural biases and personality traits (Table 1). Questions related to personality traits were framed with the Big Five personality model.

The questionnaire was segregated into three parts, the first part was dealing with the demographic profile of the respondents, the second part dealt with questions related to behavioural biases and the third part eventually carried

Table 1. Personality Traits and their Features.

Personality Traits	Description
Neuroticism	Mentally volatile
Extraversion	Highly active in investment
Openness	Inquisitive
Agreeableness	Highly empathetic
Conscientiousness	Very focused and believe in preparation

questions related to personality traits five-point Likert Scale was used to assess the responses from the investors.

Data

The study was conducted on a sample size of 100 respondents of the National Capital Region. The data collection took place with the help of a questionnaire based on previous studies, to analyse the relation.

Sample

In the sample taken to study the behaviour of the Indian investors, female investors were outnumbering male investors. Education wise the respondents were not highly educated but fairly educated. In the annual income segment, investors were mostly from middle income, and experience wise most of the investors were in the initial stages of the investment cycle. Further, in terms of age, more than half the number of respondents were in their twenties. The same trend was observed in the case of marital status. Details about the demographic profile are given in Table 2.

Table 2. Details of the Sample.

Variables	Category	Frequency	(%)
Gender	Male	37	37
	Female	63	63
Age	20–30	57	57
	31–40	38	38
	41–50	03	03
	51–60	02	02
Income	Less than 3 lakhs	58	58
	3–6 lakhs	15	15
	>6–10 lakhs	14	14
	>10 lakhs	13	13
Marital status	Married	45	45
	Unmarried	55	55
Education	Up to schooling	01	01
	Graduate	41	41
	Post-graduate	44	44
	Doctorate	07	07
	Others	07	07
Occupation	Private sector employee	26	26
	Public sector employee	17	17
	Self-employed	12	12
	Retired	01	01
	Others	44	44
Investment experience	<2 years	73	73
	2–5 years	17	17
	>5–10 years	07	07
	>10 years	03	03

Table 3. Results of the Cronbach’s Alpha Test.

Constructs	No. of Items	Alpha
Herding	5	0.856
Neuroticism	5	0.773
Extraversion	4	0.749
Openness	4	0.713
Agreeableness	3	0.705
Conscientiousness	5	0.710

Data Analysis

The study involved the use of reliability test, exploratory factor analysis and multiple regression test to analyse the data in the study and examine the hypotheses set in the study.

Reliability Assessment

Before starting the analysis of data to arrive at any result, it is essential to examine the reliability of the variables in the study. To assess the reliability Cronbach’s alpha test was performed to check the internal reliability of the constructs. A construct is considered reliable when its alpha value is more than 0.70. Summarised results of the Cronbach’s alpha test are provided in Table 3.

Exploratory Factor Analysis

After performing Cronbach’s alpha, it is essential to identify important factors so that concentrated studies can be focused upon. Using principal component analysis, the various factors are judged on the basis of factor loadings, minimum factor loading for particular factor is 0.50, and variables loading below 0.50 are not considered in the studies.

The significance of correlation among variables is adjudged by Bartlett’s test of sphericity, and the result of the test is significant hinting towards high correlation among variables.

During the factor analysis, some factors like Neuro 1 (I often feel inferior to others) were found to be loading onto other factors and hence removed. In addition to this, OP4 was loading onto other variables and Agreeable 1 and 2 were removed for the same reasons.

Testing of Hypotheses

The study proposes to study the imprint of personality traits on herding bias with the help of the hypothesis set above:

Table 4. Details about the Regression Model.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
I	.847 ^a	.717	.702	.35310

Note: ^aPredictors: (Constant), conscientiousness, extraversion, neuroticism, openness, and agreeableness.

Table 5. Overall Significance of the Regression Model.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
I	Regression	29.736	5	5.947	47.699	.000 ^b
	Residual	11.720	94	.125		
	Total	41.456	99			

Notes: ^aDependent variable: Herding.
^bPredictors: (Constant), conscientiousness, extraversion, neuroticism, openness, agreeableness.

- H_1 : Herding bias is significantly impacted by neuroticism.
- H_2 : Herding bias is significantly impacted by extraversion.
- H_3 : Herding bias is significantly impacted by openness.
- H_4 : Herding bias is significantly impacted by agreeableness.
- H_5 : Herding bias is significantly impacted by conscientiousness.

Table 4 shows the details about the regression model. Herding bias was the dependent variable whereas personality traits were taken as independent variables.

The multiple regression test was conducted involving independent variables in the form of personality traits and herding bias as dependent variables. Table 5 suggests the overall significance of the regression model, which is below 0.01 and considered highly significant.

To assess the individual impact of the personality traits on the herding bias, coefficients were further examined and on examination, we found that neuroticism and agreeableness were the two variables which had a significant relation with herding bias, as can be seen in Tables 6 and 7, both the variables, namely, neuroticism and agreeableness are showing p -value = .00 which is highly significant. Other variables did not have significant relation with herding bias.

Conclusion

The study examines the linkages between personality traits and herding bias while taking investment decisions in the case of retail investors. Retail investors nowadays are not afraid of investing in the stock market for getting additional

Table 6. Assessment of Variables.

Model	Unstandardised Coefficients		Standardised Coefficients		
	B	Std. Error	Beta	t	Sig.
I (Constant)	-.132	.258		-.511	.610
Neuroticism	.334	.066	.343	5.098	.000
Extraversion	.072	.053	.082	1.342	.183
Openness	.064	.054	.076	1.186	.239
Agreeableness	.507	.078	.501	6.493	.000
Conscientiousness Scale	.058	.049	.080	1.173	.244

Note: ^aDependent variable: Herding.

Table 7. Individual Regression Weights.

Hypothesis	Regression Weights	Beta Coefficients	t-Value	P-Value	Hypothesis Supported
H ₁	Neuro → Herding	.334	5.09	.00	Yes
H ₂	Extraversion → Herding	.072	1.34	.183	No
H ₃	Openness → Herding	.064	1.186	.239	No
H ₄	Agreeableness → Herding	.507	6.49	.00	Yes
H ₅	Conscientiousness → Herding	.058	1.17	.244	No

Note: $p < .05$.

returns and of late they have started playing a prominent role in the stock market besides foreign portfolio investors. The presence of retail investors works as a counterweight to the foreign portfolio investors. As already personality of retail investors are classified into the following five categories, namely, neuroticism, agreeableness, openness, conscientiousness and extraversion, whereas herding bias is the propensity of individuals to follow other people while taking investment decisions.

Neurotic investors usually are fearful and they are not known to take sound positions on their investments and volatility is easily observable in their actions. Any sudden spurt or drop in stock prices make them behave irrationally, and they start following other people for making investment decisions. This research also corroborates the findings of past research studies and found a significant relation between neuroticism and herding bias. Financial advisors can recommend financial products to such a category of investors in which there is less exposure to the equity market or they should be encouraged to invest in the stock market through the route of systematic investment plan and also push them to use stop-loss while actively trading.

Further, people associated with conscientiousness and extraversion are known to be resolute in their decision-making and they are known to systematically plan their investments and carry out research studies before entering the market. Due to this, our study did not find any linkage between herding bias and

conscientiousness as well as extraversion. Conscientiousness usually propels investors towards investing in safe stocks, and they generally prefer large caps.

In addition to this, agreeable investors are considered very empathetic and they listen to the advice of all the people around them. However, the major disadvantage associated with agreeable investors is they lack self-discipline, and they attach a lot of importance to the recent events that have taken place in the stock market making it highly vulnerable to the herding bias.

Limitations of the Study

The study is based on the respondents residing in Delhi-NCR, small sample size used in the study cannot be used for a more generalised conclusion and for this data from other cities should be included. Further studies can be conducted by employing questionnaires and conducting interviews to collect data in a more credible manner. Future research can be conducted by involving more variables to have a deeper understanding of the investment decisions.

Declaration of Conflicting Interests

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Impact of Working Capital Management on Profitability: A Study of the Select Indian Pharmaceutical Companies

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Abstract

The smooth running of business operations demands an efficient management of working capital by properly managing the inventory, accounts receivables and accounts payables of the business. This helps companies not only fulfil their short-term financial commitments but also boost their earnings. Therefore, the present study aims at verifying the impact of working capital management on the profitability of the companies under pharmaceutical industry in India. For empirical analysis, the data of 618 pharmaceutical companies is taken over a period of seven years from 2014–2015 to 2020–2021 and multivariate panel data regression technique is applied on data for estimating the results. The findings of the study validate that the profitability of companies is significantly influenced by working capital management. These findings will provide an insight to corporate managers and owners of pharmaceutical companies in deciding appropriate working capital strategy.

Keywords

Working capital, return on assets, fixed effects, random effects

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Introduction

The management of working capital (WC) involves the administration of all short-term assets, that is, current assets and all short-term liabilities, that is, current liabilities of the business. Though a vast literature in corporate finance has paid attention to the impact of long-term financial decisions, namely, capital budgeting decisions, financing decisions and dividend decisions, on the financial success of firms, the impact of management of short-term financial decisions involving working capital management (WCM) on firm's financial performance largely remains neglected. Since WCM is crucial to a company's profitability, risk and value, the management of short-term assets and liabilities requires a thorough investigation (Smith, 1980). Wrong estimation of WC requirement may lead the creditors and investors of firms to an unexpected risk of default (Richards & Laughlin, 1980). Thus, WCM is a critical decision-making area for finance managers as shortage of funds for WC may affect profitability and commercial solvency position of a firm. Besides efficient management of WC will help in maintaining an adequate liquidity level while increasing the profitability and market value of the firm. Effective WCM provide an aid to finance managers to enhance the value of the firm and to circumvent probable financial difficulties (De Almeida & Eid Jr, 2014).

The present study aims at finding out the impact of WCM on the profitability of pharmaceutical companies. The core stimulus to select the pharmaceutical industry of the economy is due to the following reasons: (a) India is a rising player in the global pharmaceuticals sector. According to the Indian Economic Survey 2021, India's domestic pharmaceutical market is estimated at US\$42 billion in 2021 and likely to reach US\$65 billion by 2024 and further expected to expand to reach approximately US\$120–130 billion by 2030. Thus, the domestic market is expected to grow thirty times in the next decade. (b) The Indian pharmaceutical industry, which includes 3,000 pharmaceutical companies and 10,500 production units, supplies more than half of the global demand for vaccines, 40% of generic drug demand in the United States, and one-fourth of the medicine demand in the United Kingdom (Groww, 2021). In terms of volume, India is the world's third-largest producer of pharmaceuticals and in terms of value, India ranks 14th (IBEF, 2021). (c) The Indian pharmaceutical industry contributes around 2% to India's GDP and approximately 8% to the country's total merchandise exports (RBI, 2021). (d) Being part of a manufacturing industry, the pharmaceutical companies rely heavily on WC for its successful operation and raw material happens to be the major component of cost. Therefore, the length of time in converting raw material in finished goods, finished goods to sales and sales into cash become crucial for the success and profitability of companies.

In the light of this backdrop, it becomes important to explore the impact WCM decisions on the profitability of the companies under pharmaceutical industry of the Indian economy. The rest of the study is structured as follows: The 'Literature Review' section discusses the existing literature relating to conceptualisation of WCM and its effect on the profitability. It also describes the objective and the expected contribution of the study. The 'Research Methodology' section

elaborates the research methodology. The 'Empirical Results' section presents empirical results. The 'Discussion and Conclusion' section deliberates the results and concludes the study.

Literature Review

In finance, though the management of WC has received adequate attention in empirical literature to examine the relationship/trade-off between liquidity and profitability, there is dearth of the extant theoretical research and perspective concerning with WCM to guide the financial managers regarding how to optimise the use of short-term assets to improve the long-term financial performance of the business. Gitman (1974) in his seminal research established the concept of cash cycle (CC) for WC optimisation in terms of liquidity. However, Richards and Laughlin (1980) invoked the concept of CC into the cash conversion cycle (CCC) to assess the efficiency of a company's WCM. The cash conversion cycle, often known as the WC cycle, is a crucial instrument for evaluating the effectiveness of WCM (Richard & Laughlin, 1980). To improve the financial performance of firms, the CCC needs to be shortened to the period where the operations of the business do not get compromised (Cheatham et al., 1989; Moss & Stine, 1993). It is emphasised that with the shorter the CCC, the internal processes of the business become more efficient (Gentry et al., 1990). However, the lengthier the CCC is, the higher will be the dependence of the business on external funds (Maness, 1994). This external funding can be in the form of short-term debts, long-term debts or equity (Gallinger, 1997).

Deloof (2003) asserted that receivable accounts, payable accounts and inventory are three aspects of the WC cycle that must be managed in effective ways to maximise profit or raise the company's worth. WCM tries to maximise profitability while avoiding the danger of incapability to redeem short-term debts as they mature. WCM efficacy is determined by a company's capacity to strike a balance between profitability and liquidity (Filbeck et al., 2007). The true association between WCM and profitability is dependent upon the choice of a company's WCM strategy (Tauringana & Afrifa, 2013). A company has an option to choose between two WCM strategies: conservative and aggressive (Nazir & Afza, 2009). Both strategies are diametrically opposed. According to the conservative approach, more investment in WC may boost profitability of business. On the other side, an aggressive approach recommends less investment in WC may increase profitability.

The existing theoretical and empirical literature about true linkage between the variables, WC and profitability, is not translated into a coherent theory (Falope & Ajilore, 2009). Canina and Carvell (2008) asserted that a high current ratio may not always indicate a company's good financial performance in the short run as a high current ratio could result from improved collection of receivables rather than greater sales.

To study the relationship between WCM and profitability, several empirical research are conducted in different countries for different industries. This section will briefly shed light on select studies which examined the impact of short-term financing decisions relating to WC policy on the profitability and value of the firm.

Mandal and Goswami (2010) assessed the effect of WCM on cash flows, profits and non-insurable risk of ONGC during 1998–1999 to 2006–2007 with the help of various statistical tests like *t*-test, *F*-test and Durbin–Watson test. The results showed a significant relationship between profitability and liquidity of the firm. This implied that the performance of the company should not be judged only on the basis of surplus generating capability/profitability measured in terms of return on sales and investment, the company should always try to attain a thoughtful level of WC within its risk-bearing capacity for enhancing profitability.

Nazir and Afza (2009) explored the association and influence of the type of WCM policy (aggressive/conservative) on the financial success of non-financial firms listed on Karachi stock exchange that belonged to varied industrial sectors. The study adopted Tobin's *Q* and panel data regression technique to empirically validate the results and reported a negative association between the profitability and aggressive WC policy. This indicated that the firms adopting the aggressive WC policy will fail to generate good returns.

Mohamad and Saad (2010) conducted an empirical study to provide evidence of effect of WCM on firm performance by taking 172 Malaysian companies' data for the period 2003–2007 and used regression analysis. The results concluded a significant negative linkage amid WCM and firm's value and profitability and stressed that proper management of WC is critical for improving firm's financial performance.

Ogundipe et al. (2012) researched how the management of WC affects the financial performance and the market value of the firm by taking a sample of 192 listed companies on Nigerian Stock Exchange and collecting the data for the period 1995–2009. The study employed correlation analysis and regression analysis to get empirical evidence. The results reported a significant negative relation between WCM and the market value and the financial performance of the companies. The results inferred that by shortening the length of CCC, the goal of maximising the profits and consequently, increasing the market value of firm may be achieved.

Sharma and Kumar (2011) explored the connection between WCM and profitability of 263 companies forming part of BSE 500 index from 15 different industries by taking data for the period 2000–2008. By running ordinary least squares multiple regression model, the findings of the study indicated a positive association between WCM and profitability leading to the conclusion that the longer the CCC, the better it is from the point of view of profitability. The findings of the study were in vast contrast to the results of many previous studies.

Bagchi and Khamrui (2012) investigated the relation between WCM and profitability by studying some select FMCG companies in India. The study concluded that there is a robust negative connection between components of the WC decisions and profitability of the firm. With an increase in the CCC, the decline in the profitability of the firm is evident. There is also a weak negative connection between debt employed by the firm and its profitability.

Arunkumar and Ramanan (2013) in their paper inspected the effect of WC on the profitability of Indian manufacturing companies and the results validated a significant positive linkage between return on assets and debtors' holding period

and inventory holding period. Creditors' conversion period, however, was found to have negative connection with return on assets. Sensitivity analysis was also conducted to with respect to return on assets and explanatory variables.

Singhanian et al. (2014) carried out a study to find out how the WCM exerts an influence on the profitability of 82 firms over the period 2005–2012 along with analysing the impact of worldwide recessionary conditions on the said relationship. Using correlation analysis and regression equation, the results evidenced that curtailing the CCC positively influences the profitability of firms. The results further supported that expanding the number of days receivables has an adverse impact on the profitability, while increasing the number of days payables results to enhancing the financial performance.

Ismail and Bandara (2015) checked the influence of WCM on profits of 183 companies from four different industries of Expolanka subsidiaries for the period 2009–2014 and the results confirmed a strong positive linkage between receivables conversion period and net profit and the gross profit, a strong positive association between days payable outstanding and gross profit, and a strong positive relationship amid inventory days outstanding and gross profit. The results further showed an inverse connection between CCC and gross profit and net profit making it apparent the shorter the CCC, the more will be the profits of firms.

Samiloglu and Akgün (2016) aimed at highlighting the influence of WCM on the operating performance of manufacturing companies listed on Istanbul Stock Exchange by employing multiple linear regression models on panel data for the period 2003–2012. The results of the study indicated a significant inverse linkage between accounts receivable period and various profitability indicators, namely, return on assets, return on equity, operating profit margin and net profit margin. This suggests that corporate managers may enhance value of the firm by dipping the accounts receivable period and the CCC.

Hingurala Arachchi et al. (2017) studied the effect of efficient of WCM on market value of companies listed on Colombo Stock Exchange with panel data regression techniques. The findings of the study revealed the negative effect of the CCC on Tobin's Q , signifying that an efficient WCM has potential to augment the current value of the firms. The results infer that lowering the accounts receivable conversion cycle and inventories conversion cycle helps in maximising the shareholders' wealth.

Paul and Mitra (2018) in their research paper examined the influence of WC policy on the profitability of the firms taking evidence from Indian Steel Industry and the results corroborated that profitability of companies is influenced by WC decisions. The results showed a noteworthy positive impact of quick ratio and debtors' turnover ratio on return on assets and no notable impact of finished goods turnover ratio and current ratio on return on assets.

Boisjoly et al. (2019) explored the effect of aggressive WC policy relating to metrics like receivables turnover, inventory turnover, days payables outstanding and CCC on firm valuation and profitability by applying ordinary least squares regressions on panel data of firms belonging to varied industries for the period

1990–2017. The results suggested that CCC exerts more prominent influence on firm valuation and profitability in comparison to individual metrics of WCM.

Khan et al. (2020) evaluated the effect of WCM on the profitability of the companies in the telecom sector in Pakistan. It examined the influence of the average receivable collection period, inventory conversion period, average payment period and CCC on the profitability of the companies with five years data (2013–2017). The result of this study supported that there is a negative and significant effect of WCM on the profitability of companies.

Anton and Afloarei Nucu (2021) considered the connection between WC and profitability of firms for an emerging economy, Poland, by taking a sample of 719 Polish companies for the 10-year period (2007–2016). The results reveal an inverted U-shape relationship between WC level and profitability of firms which implies that there exists an ideal level of WC that maximises Polish firm performance and if WC is increased above its optimum level, it will establish a negative relationship with profitability. Thus, finance managers should aim at achieving the finest level of WC through its major components, namely, receivables, payables and inventory, to maximise the influence of efficient WC on firm financial success in the best interest of the shareholders.

Jaworski and Czerwinka (2022) investigated the connection between WCM using measures such as CCC and WC value and the performance of Polish companies using measures such as liquidity and profitability. They considered data of 326 companies during the period 1998–2016. The empirical findings established a significant non-linear relationship between WC and performance of companies. The results showed that as WC and liquidity measured with current ratio increases, profitability too increases, but at a lower rate. The association amid the CCC and profitability turned out to be linear and negative. The results validate that to increase the profitability, the businesses try to defer payments to trade creditors and tend to settle the bank loans from the cash payments thus deferred. The study, thus, vouches the theories on linkage between the profitability and the WCM. The results imply that companies looking for growth in profitability should try to shorten CCC. For some industries, where the profitability found to have decreased as liquidity increases, it may indicate that current assets are not efficiently used.

Aldubhani et al. (2022) researched as to how WC policies affected the profitability of companies from different industries listed on the Qatar Stock Exchange. To find out this relationship, they adopted the technique of multiple regression analysis taking data of 10 manufacturing companies for the period 2015–2019. The WCM is proxied with average collection period, average payment period, inventory turnover and CCC and profitability of companies is quantified with operating profit margin, return on assets, return on capital employed and return on equity. The results inferred that shorter receivables collection periods and shorter CCC lead to high profitability and lengthier accounts payable payment periods and inventory turnover periods tend to increase the profitability of the companies.

Mandipa and Sibindi (2022) considered the data of 16 retail companies listed on the Johannesburg Stock Exchange over 10 years from 2010 to 2019 and studied the

plausible linkage among WCM practices and the financial success. They employed a fixed-effects estimator for empirical analysis. The findings of the study established that WCM policies of South African retail companies affected their financial performance. Thus, optimising the WCM proxies ‘average age of inventory, average collection period, average payment period and CCC’ used in study have potential to improve the financial performance of companies ‘net operating profit margin, return on assets, and return on equity’ without jeopardising the loss of customers.

Extant research which is conducted in various countries of the world using different exogenous variables and different methodology, in different time-frame and for different sectors and industries of the economy have reported mixed results relating to impact of WCM on profitability of companies. As the literature review of empirical studies concludes inconsistencies and vagueness in findings and one of the major factor responsible for such results is the heterogenous nature of companies belonging to different sectors/industries as most of the empirical studies used a general mix of companies of varied industries, instead of industry-specific companies; therefore, the present study aims to focus a particular industry, namely, pharmaceutical industry, having good future growth prospects. This approach is expected to help in consensus-building and reaching unambiguous conclusions regarding the impact of WCM on profitability of companies.

Therefore, the *objective* of the present study is to investigate the impact of WCM decisions on the profitability of companies belonging to Indian pharmaceutical industry taking a sample of 618 companies over a sample period of seven years from 2014–2015 to 2020–2021.

The contribution of the present study to the extant literature on the linkage between the WCM and the profitability of firms is twofold, that is, first, it specifically focuses on Indian pharmaceutical companies where limited research is done in the area of WCM vis-à-vis financial performance and, second, this study enriches the existing literature on issue under consideration with respect to manufacturing companies, in general, for their real dependence on WC cycle for managing routine operations of business while aiming to ultimately earn good profits.

The findings are expected to provide help to corporate managers and owners in devising appropriate WCM strategy that help in enhancing the profitability of companies.

Research Methodology

With the objective of finding out the repercussion of WCM decisions on the profitability of the firm in case of companies belonging to pharmaceutical industry in India, the researchers downloaded the data of 911 companies belonging to drugs and pharmaceutical industry in India from the ‘Centre for Monitoring Indian Economy’ (CMIE)—Prowess financial database over a span of seven years, from 2014–2015 to 2020–2021. However, due to missing data during the sample period in case of many companies, a final selection of 618 companies is made for empirically examining the results.

Methodology

Description of Variables

To explore the weight of WC decisions on profitability of companies under the Indian pharmaceutical industry, the current study takes returns on assets (ROA) as a dependent variable and working capital cycle (WCC), inventory conversion period (ICP), receivables conversion period (RCP), creditors deferral period (CDP) and quick ratio as independent variables along with sales, size of firm and debt-equity ratio (D-E Ratio) as control variables.

Dependent Variables

ROA: ROA is a financial ratio that measures how much profit a company is generating by investing its total assets. A rising ROA tells improving profitability of the company in relation to its total assets.

Independent Variables

WCC: WCC, also known as cash conversion cycle (CCC) is the length of time between making payment to suppliers and receiving cash from sales. It is calculated with the following formula: $WC\ cycle = Inventory\ conversion\ period + receivables\ conversion\ period - creditors\ deferral\ period$.

Inventory Conversion Period: ICP refers to the length of time taken to convert inventory into sales. It is calculated with the following formula: $inventory\ conversion\ period = (inventory \div cost\ of\ sales) \times 365$.

Receivables Conversion Period (RCP): RCP indicates the length of time it takes for the company to collect cash from its credit sales. It is calculated with the following formula: $receivables\ conversion\ period = (receivables \div sales) \times 365$.

Creditors Deferral Period (CDP): CDP indicates the length of time taken by the company to delay payment of its suppliers and creditors. It is calculated with the following formula: $creditors\ deferral\ period = (trade\ payables \div purchases) \times 365$.

Quick Ratio (QR): QR is a metric of liquidity which indicates the ability of a company to use its near cash assets to meet its short-term liabilities immediately. It is computed with the following formula: $quick\ ratio = (current\ assets - inventory - prepaid\ expenses) / current\ liabilities$.

Control Variables

Sales: Sales in accounting terms refers to the revenue earned by the company from the sales of products or services. It is calculated with the following formula: $Sales = Units\ Sold \times Sales\ Price$. As high sales volume means high profits, it is taken as a control variable.

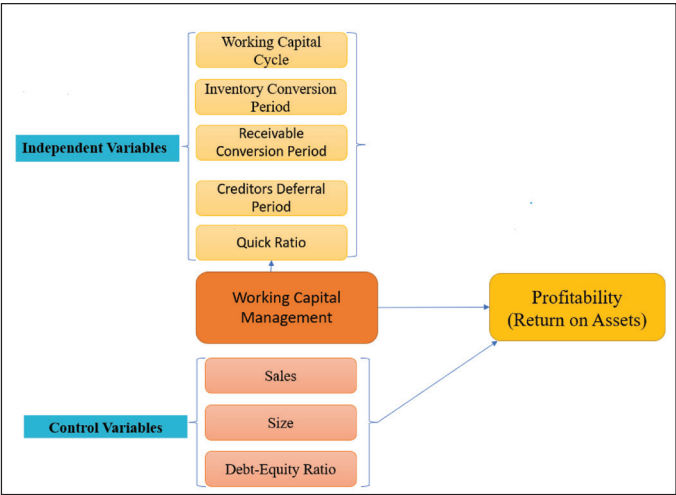


Figure 1. Conceptual Framework of the Study.

Size of Firm: There are various variables that can be used to measure the size of the firm, namely, total assets, total sales, total employees, and market value of equity. In this study, natural logarithm of total assets is taken as a measure of firm size.

Debt-equity ratio (D-E ratio): The D-E ratio is a leverage ratio that quantifies the relative amount of debt as against shareholders’ equity to finance a company’s assets. It is calculated as $\text{debt equity ratio} = \frac{\text{Total liabilities}}{\text{total shareholders' equity}}$.

Figure 1 provides a visual depiction of variables used for regression.

Empirical Model

As a preliminary exercise before applying empirical model, the descriptive statistics of data are studied and correlation analysis is done to check for existence of multicollinearity among independent variables. Also, before running regression on the panel data, it is to be ensured that all the variables are stationary since if the variable(s) data has a unit root, it may establish false results. Therefore, all the variable series are subjected to the panel unit root test. The study adopts three-panel unit tests, namely, Levin et al. (2002) test, ADF-Fisher test and PP-Fisher test (Maddala & Wu, 1999).

To find out the impact of WCM on profitability of companies under Indian pharmaceutical industry, the present study adopts panel data analysis technique. Panel data technique is appropriate in present case as data for different financial variables is collected over time, that is, the study is using longitudinal data of all variables discussed above. The results are estimated with the three generally used panel data methods, namely, pooled ordinary least squares (POLS), fixed effects (FE) and random effects (RE). However, to begin with, POLS is first applied to the data ignoring any cross-sectional and time-varying heterogeneity of panel data. Then with the help of post-estimation test, Breusch–Pagan Lagrange multiplier

(BP-LM) test (Breusch & Pagan, 1979); the results of POLS are checked for panel effects. When BP-LM test rejects the null hypothesis of ‘no random effects’, the FE and RE estimations are done. Further, to check which model, FE or RE, fits best for data, another post-estimation test, namely, the Hausman test developed by Hausman (1978) is employed to test the null hypothesis ‘RE is appropriate’. On the basis of Hausman test results, the study reaches to best-fit model. Taking the dependent variables, independent variables and control variables, the panel regression equation with intercept and error can be detailed as follows:

$$\begin{aligned} ROA_{it} = & \alpha + \beta_1(WCC)_{it} + \beta_2(ICP)_{it} + \beta_3(RCP)_{it} + \\ & \beta_4(CDP)_{it} + \beta_5(QR)_{it} + \beta_6(Sales)_{it} + \\ & \beta_7(Size)_{it} + \beta_8\left(\frac{D}{E}Ratio\right)_{it} + \mu_i + \varepsilon \end{aligned} \quad (1)$$

In the above equation, ‘ i ’ is denoting companies, ‘ t ’ is denoting year, ‘ α ’ is used for intercept, ‘ β_i ’ are denoting coefficient of independent and control variables, ‘ μ_i ’ is the unobservable time-invariant company effect and ‘ ε_{it} ’ is the random error.

Testing of Hypotheses

To attain the objective of finding out the impact of WCM on profitability of companies, the following hypothesis is developed in its null form:

H_0 : There is no statistically significant impact of working capital management on the profitability of companies.

The above hypothesis can be studied with hypotheses of individual elements of WCM and profitability in the following forms:

- H_1 : The impact of WCC on ROA is not statistically substantial.
- H_2 : The impact of ICP on ROA is not statistically substantial.
- H_3 : The impact of RCP on ROA is not statistically substantial.
- H_4 : The impact of CDP on ROA is not statistically substantial.
- H_5 : The impact of QR on ROA is not statistically substantial.
- H_6 : The impact of sales on ROA is not statistically substantial.
- H_7 : The impact of size on ROA is not statistically substantial.
- H_8 : The impact of D/E ratio on ROA is not statistically substantial.

Empirical Results

The empirical results start with a brief description of the descriptive statistics of all the variables used in the study summarised in Table 1. The mean value of return on assets is 1.570118 with a standard deviation of 25.90403%. The average WC

Table 1. Descriptive Statistics of All Variables.

	ROA	WCC	RCP	CDP	ICP	QR	SALES	SIZE	D/E Ratio
Mean	1.570118	-53.28007	217.9496	659.4837	108.8744	1.687185	4663.575	5,724.424	1.601866
Median	3.670000	90.41500	77.58000	98.66000	25.32000	0.780000	787.9000	785.7000	0.470000
Maximum	381.8200	389.507.1	96.068.00	925,001.3	209,353.6	1,124.750	158,236.8	272,177.6	399.9300
Minimum	-800.0000	-924,994.2	0.020000	2.060000	0.020000	0.000000	-2.300000	0.000000	0.000000
Std Dev.	25.90403	17151.08	2,133.587	15,278.23	3,446.085	19.51229	13,987.02	19,492.90	8.981392
Skewness	-10.56307	-35.34917	31.33857	56.74409	60.22214	49.46703	5.843943	6.663201	28.31273
Kurtosis	290.9531	2,191.292	1,197.964	3,407.396	3,656.038	2,680.057	42.79139	56.90913	1,098.203
Jarque-Bera	14,401,009	8.02E + 08	2.37E + 08	1.90E + 09	2.07E + 09	1.28E + 09	295,761.7	555,338.7	1.89E + 08
Probability	.000000	.000000	.000000	.000000	.000000	.000000	.000000	.000000	.000000

Source: Author's calculation using EViews.

cycle of all the companies taken together is around (–) 53 days, the average receivables conversion period is around 217 days, the average creditors deferral period is around 659 days and the average inventory conversion period is around 108 days. The average quick ratio of all the companies taken together is 1.687185, the average sales revenue is ₹4,663.575 million and the average debt-equity ratio is around 1.6. The evidences of skewness and high kurtosis are evident for all the variables. The Jarque-Bera statistics is significant for all the variables at 1% level of significance, indicating that the data is not normal.

Table 2 presents the correlation matrix of all the variables. ROA is found to have a negative correlation with WCC, RCP, CDP, ICP and sales and a positive correlation with QR, size and D/E ratio. If we look at bivariate correlations between the independent and/or control variables, WCC is having a positive correlation with RCP, QR, size and D/E ratio but a negative correlation with CDP, ICP and sales. RCP is seen to have a positive correlation with CDP, ICP, QR and sales and a negative correlation with size and D/E ratio. CDP has a constructive association with ICP and sales and adverse association with QR, size and D/E ratio. ICP is having a positive correlation with QR and sales and a negative correlation with size and D/E ratio. QR is showing a negative correlation with sales a positive correlation with size and D/E ratio. Since the results do not show high value of correlation coefficient (>0.08) amid any two independent variables used in the study, the problem of multicollinearity is not established. Gujarati (2004) suggested that if the value of correlation coefficients among independent variables does not outdo the threshold value of 0.80, the problem of multicollinearity becomes implausible.

Before explaining the regression results, the results of the three-panel unit root tests, namely, Levin, Lin, and Chu test, ADF-Fisher test, and PP-Fisher test, are reported in Table 3 relating to inspecting the stationarity of all variable series. The results show all the variable series (ROA, WCC, RCP, CDP, ICP, QR, sales, size and D/E ratio) are stationary with p value $< .00$ or $< .05$.

Table 4 highlights the results of POLS. If we look at the impact of independent variables on dependent variable, the results reveal a negative significant impact of WCC, CDP and ICP on ROA and a positive significant impact of RCP and QR on ROA. In case of the control variables, there is a significant positive impact of sales on ROA and significant negative impact of size and D/E ratio on ROA. However, because of possible random effect in data, the results are tested for panel effect.

Table 5 presents the results of Breusch–Pagan test. The results confirm the presence of random effects because the reported LM statistics (1,394.389) is significant at 1% level of significance. This indicates that POLS results are not efficient and FE or RE model can be applied.

Table 6 provides the results of fixed effects model. The results disclose a significant and negative impact of WCC, CDP, size and D/E ratio on ROA, while a significant and positive impact of RCP, QR and sales on ROA. No significant impact of ICP on ROA is reported.

Table 7 reports the results of random effects estimation. The results are alike the results of fixed effects model. The results show a significant negative impact of WCC, CDP, size and D/E ratio on ROA; however, a substantial positive impact of RCP, QR and sales on ROA is found. ICP is found to have no substantial relationship with ROA.

Table 2. Correlation Matrix.

	ROA	WCC	RCP	CDP	ICP	QR	SALES	SIZE	D/E Ratio
ROA	1.000000								
WCC	-0.056744	1.000000							
RCP	-0.094325	0.631824	1.000000						
CDP	-0.025815	-0.734846	0.052636	1.000000					
ICP	-0.100512	-0.012177	0.057514	0.128514	1.000000				
QR	0.065652	0.005983	0.003694	-0.004956	0.009808	1.000000			
SALES	-0.106992	-0.003549	0.000843	0.009489	0.006431	-0.010528	1.000000		
SIZE	0.118952	0.022107	-0.009798	-0.025767	-0.008723	0.000722	-0.034207	1.000000	
D/E ratio	0.061618	0.022515	-0.005610	-0.020236	-0.005595	0.001828	-0.026159	0.750588	1.000000

Source: Author's calculation using EViews.

Table 3. Results of Panel Unit Root Test.

Tests	Levin, Lin, and Chu Test	ADF-Fisher Chi-square	PP-Fisher Chi-square	Results
Panels	Statistics with P Value			
ROA	-123.581 (.0000)	2,002.80 (.0000)	2,450.85 (.0000)	No unit root
WCC	-3,928.63 (.0000)	1,654.57 (.0000)	1,953.55 (.0000)	No unit root
RCP_	-178.367 (.0000)	1,702.28 (.0000)	2,046.82 (.0000)	No unit root
CDP	-3,191.62 (.0000)	1,675.98 (.0000)	1,965.74 (.0000)	No unit root
ICP	-9,154.56 (.0000)	1,415.72 (.0000)	1,739.02 (.0000)	No unit root
QR_	-1,077.61 (.0000)	1,891.74 (.0000)	2,435.01 (.0000)	No unit root
SALES	184.7811 (0.0421)	1,383.64 (.0000)	1,972.79 (.0000)	No unit root
SIZE	-54.9025 (.0000)	3,037.67 (.0000)	2,922.27 (.0000)	No unit root
D/E ratio	-106.626 (.0000)	1,328.11 (.0000)	1,566.62 (.0000)	No unit root

Source: Author's calculation using EViews.

Table 4. Results of Pooled Ordinary Least Squares (POLS) Estimation.

Dependent Variable: ROA				
Method: Pooled Ordinary Least Squares (POLS)				
Variable	Coefficient	Std Error	t-Statistic	Prob.
C	6.778413	0.252797	26.81370	.0000
WCC	-0.008039	0.001337	-6.014493	.0000
RCP_	0.007817	0.001462	5.348005	.0000
CDP	-0.008055	0.001343	-5.999258	.0000
ICP	-0.007157	0.004343	-1.647948	.0995
QR_	0.076275	0.019528	3.905970	.0001
SALES	0.000409	3.71E - 05	11.02660	.0000
SIZE	-0.000238	2.61E - 05	-9.140529	.0000
D/E ratio	-0.111491	0.019749	-5.645492	.0000
R-squared	0.082916	Mean dependent var		5.892108
Adjusted R-squared	0.080678	SD dependent var		10.64286
SE of regression	10.20451	Akaike info criterion		7.486270
Log-likelihood	-12,298.43	Schwarz criterion		7.502962
F-statistic	37.05784	Hannan-Quinn criter.		7.492246
Prob (F-statistic)	0.000000	Durbin-Watson stat		.848181

Source: Author's calculation using EViews.

Table 5. Breusch-Pagan Test Results.

Lagrange Multiplier (LM) Test for Panel Data	
Null Hypothesis: No Random Effect	
Breusch-Pagan	1,394.389 (0.0000)

Source: Author's calculation using EViews.

Table 6. Fixed Effects Model Estimation Results.

Dependent Variable: ROA				
Method: Fixed Effects				
Variable	Coefficient	Std Error	t-Statistic	Prob.
C	5.740028	0.327513	17.52609	.0000
WCC	-0.005142	0.001371	-3.749998	.0002
RCP_	0.004921	0.001478	3.328101	.0009
CDP	-0.004962	0.001370	-3.620736	.0003
ICP	0.002383	0.004826	0.493706	.6216
QR_	0.048759	0.015743	3.097211	.0020
SALES	0.000532	6.51E - 05	8.167454	.0000
SIZE	-0.000310	4.26E - 05	-7.259184	.0000
D/E ratio	-0.043607	0.018719	-2.329598	.0199
R-squared	0.587941	Mean dependent var		5.892108
Adjusted R-squared	0.500944	SD dependent var		10.64286
SE of regression	7.518536	Akaike info criterion		7.029232
Log-likelihood	-10988.06	Schwarz criterion		8.082664
F-statistic	6.810262	Hannan-Quinn criter.		7.406386
Prob (F-statistic)	0.000000	Durbin-Watson stat		1.587010

Source: Author's calculation using EViews.

Table 7. Random Effects Model Estimation Results.

Dependent Variable: ROA				
Method: Random Effects				
Variable	Coefficient	Std Error	t-Statistic	Prob.
C	5.824094	0.377665	15.42134	.0000
WCC	-0.006266	0.001258	-4.981853	.0000
RCP_	0.006040	0.001365	4.425781	.0000
CDP	-0.006163	0.001259	-4.895468	.0000
ICP	-0.001388	0.004343	-0.319653	.7493
QR_	0.053788	0.015512	3.467438	.0005
SALES	0.000484	4.85E - 05	9.971018	.0000
SIZE	-0.000284	3.36E - 05	-8.455123	.0000
D/E ratio	-0.063738	0.017453	-3.652022	.0003
R-squared	0.055075	Mean dependent var		2.310055
Adjusted R-squared	0.052770	SD dependent var		7.797064
SE of regression	7.612866	Sum-squared resid		190,036.8
F-statistic	23.88960	Durbin-Watson stat		1.314500
Prob (F-statistic)	0.000000			

Source: Author's calculation using EViews.

To check which model, FE or RE, is best fit in the present case, the results of RE model are subjected to post-estimation Hausman test. The results of Hausman test are shown in Table 8. The test outcomes rejected the null hypothesis of appropriateness of RE model as reported chi-square statistic (28.472727) is significant

Table 8. Hausman Test Results.

Correlated Random Effects—Hausman Test			
Test Cross-section Random Effects			
Test Summary	Chi-sq. Statistic	Chi-sq. df	Prob.
Cross-section random	28.472727	8	.0004

Source: Author’s calculation using EViews.

with a p value (.0004). This infers that fixed effect estimation is best fit for the panel data of 618 Indian pharmaceutical companies.

Thus, the overall empirical exercise concludes that according to the best fit ‘fixed effects model’, WCM decisions proxied with WCC, RCP, CDP, QR, sales, size and D/E ratio puts a significant impact on profitability proxied with ROA. ICP does not exert any noteworthy impact on profitability. Therefore, the null hypotheses H_1 , H_3 , H_4 , H_5 , H_6 , H_7 and H_8 are rejected and the null hypothesis H_2 does not get rejected. The null hypothesis (H_0) for overall impact of WCM on profitability of companies is rejected.

Discussion and Conclusion

With the objective of finding out the impact of WCM on profitability in case of companies under the Indian pharmaceutical industry, the present study took a sample of 618 companies over a period of seven years and employed panel data methodology for empirical analysis. As fixed effects model found to be the most appropriate model, the discussion on results and concluding remarks are based on fixed effects model’s findings. The study depicts a negative influence of WC cycle and creditors deferral period on profitability, a positive impact of receivables conversion period and quick ratio on profitability, and no influence of inventory conversion period on profitability. The negative impact of WC cycle on profitability is in conformity with many previous studies including Deloof (2003), Nazir and Afza (2009), Mohamad and Saad (2010), Ogundipe et al. (2012), Bagchi and Khamrui (2012), Singhanian et al. (2014), Hingurala Arachchi et al. (2017), Khan et al. (2020) and many others. The results convey that shortening of the WC cycle can positively affects the profitability of Indian pharmaceutical companies. The negative affiliation between the creditors’ deferral period and profitability indicates that decreasing the average payment period for suppliers can increase the profitability of companies while increasing the average payment period can lead to decline in profitability. Thus, the shortening of creditors deferral period can enhance the profitability of the companies. These findings are supported with the studies conducted by Raheman and Nasr (2007), Lazaridis and Tryfonidis (2006) and Sharma and Kumar (2011). A significant positive impact of receivables conversion period on profitability infers that increasing the collection days from debtors for credit sales can enhance the profitability of the companies. The same result is reported by Sharma and Kumar (2011) and Arunkumar and Ramanan (2013), however, is in contrast with many previous

studies (Falope & Ajilore, 2009; Raheman & Nasr, 2007). This implies that a delay in collection of receivables, that is, extending the receivables conversion period has potential to increase the profitability of the companies. The significant positive impact quick ratio on return on assets suggests that a higher quick ratio, that is, higher liquidity can also positively impact profitability of pharmaceutical companies in contrast to the classical concept of trade-off between liquidity and profitability (Smith, 1980). However, this result is in conformity with the studies conducted by Shakoor et al. (2012), Pandey et al. (2016), Bala et al. (2016), Janjua et al. (2016). An insignificant positive relationship between inventory conversion period and return on assets indicates that there are inconsequential evidences that lengthening of inventory conversion period can cause increased profitability. This result contrasts with most of the earlier empirical research suggesting an inverse relationship between inventory conversion period and profitability of companies (Filippini & Forza, 2016; Nazir & Afza, 2009). Further, the results suggest that there is a significant positive impact of sales on profitability, that is, as sales increase, the profitability of pharmaceutical companies increases, a significant negative impact of size on profitability, that is, as the firm size increases, profitability decreases and a significant negative impact of debt-equity ratio on profitability, that is, as debt capital increases in proportion to equity, profitability decreases. Overall, the empirical findings suggest that WCM decisions significantly influence the profitability of Indian pharmaceutical companies.

The relationship of WCM cycle and profitability supports aggressive WC strategy. It implies that if the companies minimise their investment in current assets and speed up their WC cycle, it will positively influence the profitability. However, the results of individual components of WC support the conservative approach of WCM. According to results, if the companies invest a high amount of capital in current assets by adopting liberal credit policies, maintaining higher liquidity, making payment to suppliers in short duration of time and maintaining a higher inventory level, they will experience uninterrupted high sales volume and profitability and would be able to meet short-term liabilities promptly, thus, reducing the chances of bankruptcy. Thus, the results are mixed and inconclusive.

The reasons for no clear-cut results may be due to the fact that the present study is restricted to seven years secondary data of only 618 pharmaceutical companies for the period 2014–2015 to 2020–2021 and the data are downloaded from the ‘CMIE’ Prowess Database. Therefore, the reliability of the study is purely dependent upon the selection of companies, sample period, nature of industry and accuracy of data source. Future studies could be done by taking different proxies for profitability and different control variables over different time period to validate or vitiate the results of the present study. Further, more sophisticated panel data techniques like the generalised method of moments (GMM) can be employed for analysis.

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Effects of Covid-19 on Employee Engagement: A Study in the Context of Work-from-Home Practices

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Abstract

Employee engagement is a human resources (HR) concept that describes the level of enthusiasm and dedication a worker feels towards their job. Engaged employees care about their work and about the performance of the company, and feel that their efforts make a difference. The main purpose of the study was to understand how employees are engaged when there is no job security and career growth and also to find the best tools of employee engagement in the phase of work-from-home practices. The study found that employee engagement and its factors have a direct and significant effect on organisational performance (Xanthopoulou et al., 2009, *Journal of Occupational and Organizational Psychology*, Vol. 82, Issue 1, pp. 183–200). In this uncertain period of coronavirus pandemic, the organisations have taken a big dig in terms of increment and innovation, which led to overall downsizing. The study also found that the employee engagement is significant and positively related to the organisational performance and in the times of Covid-19, the organisational performance is reduced as the employee engagement became low and poor.

Keywords

Employee engagement, knowledge sharing, organisational performances and Covid-19

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Introduction

Coronavirus was first started in December 2019 in China in the Wuhan city, which has turned the entire world into a global crisis. It has put everything like health, wealth, job and human at a great risk. Due to this big destruction, there is a collapse in human and human activities, which are never compensated and even if compensated cannot give the desired value. In other words, it can be called as an irreparable loss in terms of losing lives of millions of people across the world. The pandemic caused massive destruction in the countries, resulting in high unemployment. The growth and development had showed a decline and reduced the work of producing, financing and making money, which resulted in huge financial crisis. It was not a particular sector or department which is affected even a very common man; a layman on the road also got effected with this drastic pandemic. Due to this Covid-19 pandemic, most of the countries are in lockdown and there was all-time mask wearing, no physical activity, social distancing, isolation, work from home, sanitisation and quarantine kind of protocols followed in the era of Covid-19, which had reduced almost all activities like participation, involvement, coordination, collaboration, organisation and engagement and put the companies to zero, where it continuously demands all these.

The present study laid an emphasis on the managerial concepts of the companies and their existence in this tedious situation of coronavirus. Covid-19 has ruined the companies and made them work by hook and crook without giving anything. The study contributed to the knowledge base in the allied areas of Human Resource Management (HRM), Organisation Theory and according to Bandura (1977), Practice and Organisational Behaviour because Employee Engagement as an area of study has been gaining vast and critical importance in the contemporary organisational environment ranging from the management of business enterprises to government administration. Whether it is a functional area of a business enterprise or a department in the company's administrative setup the productivity largely depends on the level of engagement that its employees exhibit in due course of their discharge of duties (Bakker et al., 2007). Studies undertaken on employee engagement in various enterprises and industries are large in number; however, studies pertaining to employee engagement in the domain of HRM and its application on employee work-from-home practice are rare. According to Chandani et al. (2016), the level of employee engagement in a business enterprise specifically affects the productivity, efficiency and effectiveness of the respective enterprise, but the level of employee engagement in the various hierarchies and departments of companies affects the wide gamut of stakeholders who come under the ambit of the top level of people. Hence, the proposed study gains much impetus with attention on the effect of concepts and tools of HRM, on the functioning of employees in the Covid-19 era (Patro, 2013). In this tough moment of pandemic, it has become difficult for employees to carry out work and bring results and to stay dedicated, committed, fulfilled and motivated in the business. Covid-19 has made the companies less operative, and to cope with that, the organisations have come up with the measure like work-from-home regime, flexible work schedules, shifts in the work, work balances, setting standards, balance of pay, mother and

child care, baby settings and professional and personal growth (Chang et al., 2011). Among all, work from home in this Covid-19 is taken as the purpose of this study. The pandemic had given a disaster to not only organisations but also to the employees to get engaged and involved in the work and work roles. Particularly, employees who have satisfaction with their organisations are supplementary expected to be involved in their job as time passes by means of skills, talents and attitudes and employees who are engaged are strengthened by using the most of their existing resources to acquire new resources (Fetzner et al., 2014).

Theoretical Concepts of Employee Engagement

According to Ho Kim et al. (2017), company environment is the most important constraint that influences the employee engagement, which in turn influences the organisational performance. The main objective of this work is to examine the effect of Covid-19 on employee engagement in the phase of work from home during the lockdown. This finding can be useful to companies and their managers who are working under different sectors when attempting to realise the influence of organisational environment on employee engagement and finally on organisational performance (Kompaso & Sridevi, 2010).

Employee engagement is the emotional, physical and cognitive promise of the employees towards the organisation (Kahn, 1990). It is also a behavioural and intellectual commitment. It is a connection between employees and companies. Adequate tools to perform work responsibilities and motivation also contribute to increasing employee engagement according to Albrecht (2012). Employee engagement is very important in today's highly competitive and dynamic business world (Llorens et al., 2007). Engaged employees perform the difficult, stay for a longer time in their job, committed and connected in the company's bottom line. It is a vast asset for the organisation and employees contribute their loyal efforts for the benefit of the organisation (Bakker & Demerouti, 2008).

In the present era of Covid-19 and global business environment, the organisation tries hard to develop a good and efficient engaged employee and team employee engagement is related to several outcomes like market share, competitive advantage, profitability, higher productivity, customer satisfaction and innovation kind of outcomes (Saks, 2006). But due to this pandemic, there is no proper organisational thing, which is leading to outcomes like challenges to turnover, low productivity, conflicts and low motivation. So, it has become must to enhance engagement and involvement of the employees even in work from home during the lockdown. In this context, the very important and alarming point is what are the needs and wants (expectations) of the employee and what the organisation is delivering. In order to develop and grow the organisation and its performance, the businesses should focus on a committed, motivated, satisfied and engaged workforce (Schaufeli, 2018). It has become a very crucial and complex concern in this global crisis of Covid-19.

The above question is probably addressed by making the employee committed and connected. The focus should be on how employees are physically cognitive

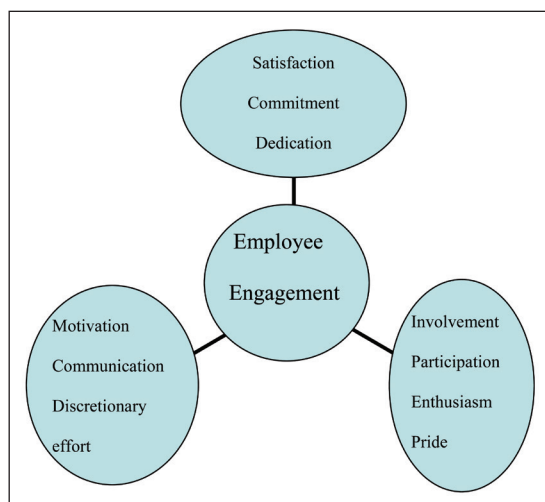


Figure 1. Factors of Employee Engagement.

Source: Developed by the researchers.

and expressively committed to the business and greatly mingled in their work on role with abundant zeal, energy, pride and performance. In addition, focus on the meaningfulness, safety and availability of psychological conditions had a progressive result on engagement according to Rothmann (2013). Figure 1 shows various factors of employee engagement (Tampubolon, 2016), which may be targeted by the organisations to ensure the engagement of their employees.

Literature Review of Employee Engagement

The past reviews and research work on employee engagement had provided a clear insight into the area of the study. The following reviews are taken from the numerous works of various researchers whose summary is given below.

According to Kahn (1990), employee engagement is defined as investing oneself into the work or job roles in the organisation and also expressing oneself physically, cognitively and emotionally during the job. Buckingham and Coffman in 1999 wrote the book '*First Break all the Rules*', which has created awareness regarding the concept of engagement in employees in the corporate environment. Several explanations declare employee engagement is rather helpful in achieving the organisational objectives (Joshi & Sodhi, 2011), whereas others assert that it is something that the individual carries to the workroom (Harter et al., 2002; Goddard, 1999).

Marcie Pitt-Catsouphes and Christina Matz-Costa (2009) presented a work called The Age & Generations Study by the Sloan Centre on Aging & Work at Boston College in 2007 and 2008. The centre accompanied with nine U.S. workrooms is designed for this learning. The study stressed that age is a key feature meant for powerful worker engagement. Another study proposed a work on examination of facts

composed after 2,400 employees and 240 HR (human resource) executives from 26 organisations through a novel measurement instrument—The Accenture Human Capital Development Framework, which discovered that establishments with the greatest promised personnel have constructed an environment that nurtures inspiration, obligation and desire for exertion (Pandita & Ray, 2018). According to Tom Newcombe's (2013) article meetings about a research published by software provider Midland HR comprising 94 HR directors from higher education institutions in the UK, the overwhelming majority of respondents (82%) reported that motivation and engagement had improved in prominence completed the past five years.

Employee Engagement and Organisational Performance

Bakker and Demerouti (2008) revealed in Article 4 particulars why engaged workforce performs better than non-engaged workers. Engaged employees: first, always consist of positive feelings like joy, happiness, pleasure and enthusiasm; second, realisation of better psychological and physical health; third, generate their personal work and own possessions (e.g., support from others); and finally, handover their commitment to others. Bakker et al. (2004) highlighted that workers who are engaged obtain an advanced rankings after their co-workers in-role and extra-role performance, signifying that involved employees accomplish fine and are enthusiastic to accomplish improved. Numerous writings clue to the inference that in accumulation of business assets, personal possessions to abstain a foremost atmosphere to produce a significant level of work engagement. Schaufeli et al. (2006) study focused among female school principals and originated that individual with maximum personal resources counted maximum on effort engagement. According to Welbourne (2007), the mere system to expand worker engagement through various organisations is to recognise the kind of behaviours are needed not just approaches and attitudes. The role-based presentation supports in ascertaining the kinds of performances required from employees to initiate improved enactment van den (Ahmed et al., 2020).

de Waal and Pienaar (2013) found that promised personal assistants recorded greater in-role and extra-role routines and obligated extra stimulus on day-to-day occupational.

Schaufeli et al. (2006) piloted evidence on the concept of engagement and performance among 105 school principals and 232 teachers. Their work displayed important and optimistic relations amid school principals' work engagement scores and teacher ratings of school principals' performance and leadership (Vermooten et al., 2020). In addition, engagement was strongly related to creativity; the higher school principals' levels of work engagement, the improved they were capable to arise with a range of conducts to compact with job-related difficulties. Xanthopoulou et al. (2007) made a convincing event of the analytical worth of work engagement for routine, on a daily basis scheduled study among Greek employees working in a fast-food restaurant. Daily job earnings, like manager preparation and work atmosphere conditioned to employees' personal resources (day-levels of optimism, self-efficacy and self-esteem), which, in turn, explained

daily engagement (Widyawati, 2020). Importantly, this study clearly showed that engaged employees perform better on a daily basis.

Benefits of Employee Engagement

This study is putting forward the various benefits of engaging employees by applying the discussed strategies to develop the organisations and the employees and to become result driven and meet the current needs and demands of the market and the environment. Reviews and other publications viz. Saks (2006, 2017) and Bakker and Schaufeli (2008) had proved that employee engagement will definitely bring positive and great benefits to the companies and the employees as well. Studies of Kumar and Pansari (2016), Gretz and Jacobson (2018) and Geue (2018) show there are large-scale and huge paybacks of employee engagement. Implementing the techniques and tools of engagement has not alone promoted different sectors across the globe but also different departments in the organisations like planned business management, tactical facility management, working and decision-making management, logistics administration, research and development management and people management. The overall gap that exists between the employee and the organization has to be fulfilled in order to perform better and again increment and satisfaction confirmed from the studies of Meyer (2017). Figure 2 depicts the benefits of employee engagement related to the various aspects of organisational management.

Outcomes of Employee Engagement

The study had also concentrated on the possible outcomes of engagement in employees that have been found from the past research studies. It also laid an emphasis on

Benefits of Employee Engagement		
	<u>Operation and Mnagerial Benefits:</u>	
<u>Strategic Service Benefits:</u>	Administration	
Quality service	Organizational Performances	
Improved and increased satisfaction	Production and productivity	
Good delivery	Human Resources	<u>People Management Benefits:</u>
Communication and convenience	Team work and team attitude	Employee worth and value creation
Organization agility	Employee turnover and employee retention	Behavioral management
Organizational citizenship behaviour	Workers efficiency and objectivity	Perceptonal analysis
High order request	Innovation and creation	Attitude and attribute context
Customer value and creation	Financial and crisis management	Pay and reward management
Add on value and recognition	Cost and accounting benefits	Absentism and employee considerations
Removal of errors in services and delivery	Selling and purchasing	Employee satisfaction
Extra care and concern		Talent and skills acqisition
		Safety and security measurese

Figure 2. Benefits of Employee Engagement.

Source: Developed by the researcher.

how employee engagement is significant in achieving organisational objectives effectively and efficiently. From the review, it is clear that the organisations should induce the engagement in the employees and provide the employees the means and ways to get engaged in the work and work role. Getting involved into the activities of organisation will not only benefit the company and its procedures but also the employees at the personal and professional level. Reviews of Shahid (2019) found few drivers of employee engagement like free rewards, pay management, satisfaction, counselling, monitoring and mentoring, which increased employee engagement to the large level and gave rise to many outcomes. Reviews from research firm such as Gallup, Towers Perrin, Blessing White and The Corporate Leadership Council mentioned a few factors like trust and integrity, career growth opportunity, relationship with manager and produced outcomes like employee development, employee integrity. According to reviews of Gruman and Saks (2011), the importance on the concept of changing the jobs frequently, focusing more on short run benefits rather than long run and becoming stagnant in staying one particular job which is never upbringing and growing. The basic idea that lies here is the importance of employee engagement by means of which the employee can stay longer sometimes their whole life in one particular organisation and relish the benefits of engagement like higher pay, reward and recognition, career growth and opportunities, expectation and demands fulfilment and future and family status. Reviews from the Gemma Robertson-Smith and Carl Markwick, Report 469, Delloit University Press conducted a research titled '*Becoming Irresistible: A New Model for Employee Engagement*' by Josh Bersin (2015) have focused on implementing the strategies of employee engagement as an individualistic approach, concentrating on few things like transparency in vision, making work more meaningful, career growth opportunities in bringing out few outcomes like employee development and growth, relationship with colleagues and supervisors, peer reviews and feedback, suggestions and information.

According to Kahn (1990), Harter and Bakman employee engagement is emotional, physical and cognitive, commitment behavioural and intellectual commitment, which emphasises the human and personal resources aspect of the engagement and gives the personal outcomes like self-efficacy and organisational-based self-esteem. Optimism, resilience, value creation, worth analysis, confidence, intellectual ability and intelligence. According to Yadav (2020), right employees appointed at the correct period at true place with accurate talent is completely involved with obligation and perseverance along with unrestricted determination to achieve desired goals and values with outcomes like employee dedication, commitment, involvement, participation and satisfaction.

According to Schaufeli (2018) psychological and sociological factors will improve employee well-being and forms organisational bases to employees at work. These psychological and sociological factors if managed well will very soon turn into financial benefits and financial return to the companies. Reviews of Saks (2006) and Rana et al. (2014) state that if the employees are engaged in the organisation, they invest themselves fully in the organisation which leads to higher employee occupation presentation, willingness to be with the organisation, organisational citizenship behaviour with. Studies by Robertson-Smith and Marwick

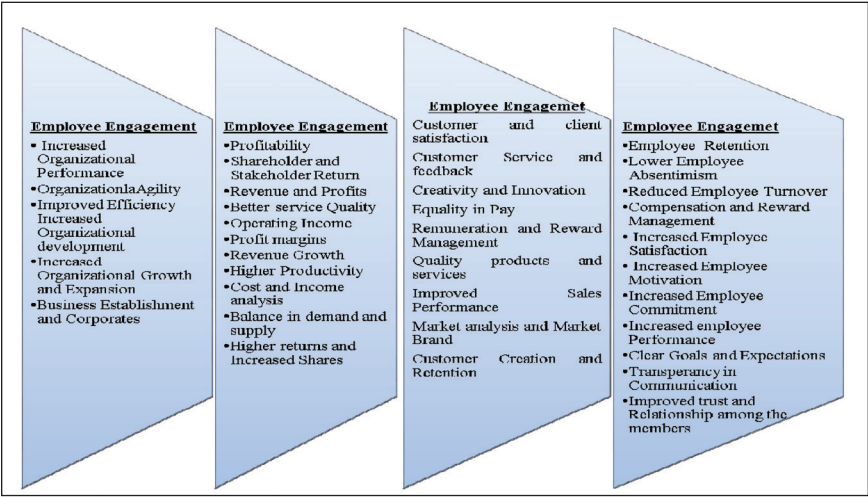


Figure 3. Outcomes of Employee Engagement.

Source: Adapted from the work of Paul Turner (2020).

(2009) found that employee engagement gives rise to organisational alertness, better-quality, productivity and finally profitability, shareholder or investor worth. This study focused more on financial aspects of the organisation. In addition, additional investigations from Garrad and Chamorro-Premuzic (2016) had found that developed heights of engagement consume a progressive impression on employee comfort, concert, and retaining and involved elements incline to direct better performance in relation to incomes and earnings, better facility excellence and advanced customer assessments. Figure 3 shows the expected outcomes of employee engagement.

Covid-19

A disease that affects the respiratory system of human has appeared in the city of Wuhan, China. The laboratory study has recommended that the virus remained linked to a seafood marketplace in the city. From Wuhan, it has spread to the entire globe affecting 5,934,936 cases globally with at least 360 thousand demises according to reports of WHO as of May 31, 2020 (Wu & McGoogan, 2020). Looking at the speed with which it was spreading almost entire world went into lockdown closing their borders for outsiders to avoid further spread of the virus (World Health Organization, 2020a). The Covid-19 pandemic and its life-threatening issues created the urgency for new working styles and modes of working, especially social, emotional and advanced cognitive abilities. In total, 58% of respondents from the current worldwide review found out that ending skill breaks converted a basic significance from the time when the pandemic commenced (World Health Organization, 2020b). Organisations must opt for a wide-ranging catalogue of abilities through their corporations, develop creative

platforms for continuing knowledge and construct culture environments over collaboration by means of business societies and professional. Business at large is facing a lot of difficulties and massive challenges in the area of demand and supply of skills and quality work. The same problem is with modifications in response, quantity, resources, carriage and movement in addition to wage earner security. Both sides, the workforce as well as the regulars, is facing damages and down falling.

Effects of Covid-19 on Employee Engagement and Organisational Performance

This scary pandemic had raised an alarming job crisis in India at a difficult demographic time. India wants to create approximately 10 million occupations each year to engross individuals affected by the Covid pandemic and also those who are already jobless (World Health Organization, 2020c). Coronavirus produced distress and changed the process of the claim and stock chain crosswise the country, and there are extreme disturbances in different sectors like the vacation industry, unfriendliness and flight amid the poorest exaggerated segments, which are fronting the extreme influence of the existing catastrophe. The closure of cinemas, multiplexes and supermarket-run facilities has exaggerated the merchandising zone by distressing the usage of together important and compulsory stuffs. It has become very difficult to find excellence effort and staff. At this peak period when all the vendors and facility earners are concluding personnel, engagement is at great danger. Some segments like industrialists, mobility, medicines, microchip technology, biochemical merchandises, etc., have been obstructed large. Globally, around 136 million non-agricultural occupations stand on instant menace, assessments on National Sample Survey and Periodic Labour Force Surveys. There stay few transactions that involve no on-paper agreement and contain spontaneous earners and some people who work in non-approved nano trades, enumerated minor corporations and also the entrepreneurial, as Covid-19 has appeared such companies and public are completely jobless. While the daily-wage earners are taking charge of the load in the initial stage of reductions, establishment's cross-wise skills could pink-slip employees on short-range conventions following.

As the Covid-19 pandemic is captivating a peal in the world money, nearly 36% of the organisations are tranquil and worried almost on forthcoming redundancies, removals, economising owing to the randomness occurred in means of Covid-19. Weirdly the personnel of China, one of the slightest exaggerated nations by the pandemic, have emphasised professional disaster and exertion loss as the biggest fear with a total of 44 out of 100 personnel in the nation persisting terrible forthcoming employment harm. Likewise, 41% of employees in Mexico, 40% in Canada and 37% in the United States take articulated distresses and went in ensuring job safekeeping and safety. The survey titled 'Hindsight 2020: Covid-19 Concerns into 2021' was conducted by the Workforce Institute at UKG.

In the direction to preserve the workforce on occupation and to evade monetary losses for the businesses, the administrations devise to sustain the employees and

keep them engaged and satisfied by working on personal resources in this situation of working from home. It is an exclusively contradictory concept that the degree of burden is less while working from home than working in office in fact it is equal. The survey shows that 43% of employees have protested around exhausted and hurt out as a worry in together ways of working. In view of the public health disaster, nations have started a lockdown in mandate to control the movement of public for stopping the feast of this highly infectious respiratory disease. Nevertheless, these conditions had changed daily actions, organisations' procedures and stock restraints. Due to Covid-19 pandemic and nationwide lockdown for a very long period in months together in all over world, there was a phase of no transportation, no social gathering, no direct panel discussion, no red-face teamwork, isolation, quarantine and social distancing there is a lot of change in the mode of work, work style and job association of the employees. This disease condition has enlarged the likelihood and requirements of many workers to work from home with an increase in number of working hours, timely promises and enduring stress which had run to numerous well-known and unidentified psychological healthiness difficulties. Nowadays employees are fronting novel experiments, power atmosphere and dissimilar sets of life actions likened to the pre-Covid-19 period. Therefore, this study will help policy maker, researcher, corporate sectors, and public and private sectors for comprehending and study the effect of personal resources on organisation engagement. As the infection spreads very rapidly, many regions have started closures and shutdowns and work from home. However, the possibility of a recurrence of Covid-19 has made it mandatory for personnel and establishments to adapt to the new routine or regime.

Covid-19 has generated an atmosphere of ambiguity among individuals and positioned an important load on their inner possessions to meet by means of the resulting encounters. Even companies with good outcomes got affected by the lockdown, and industries started bleeding in view of the Covid crisis. Thus, for all industries to survive, Employee Engagement has developed as a necessary tool for corporate continuity and reclamation. As a positive personal resource enables employees to divert from a traumatic workstation and unpredictable and dreadful occasions like the Covid-19 pandemic. Figure 4 explains that before Covid-19 employee engagement used to be high and that led to better organisational performance but during Covid-19 because of work-from-home practices proper engagement could not be ensured and that affected the organisational performance as well.

The above framework states that before the coronavirus employee and company performance was desired and up to the mark as employees is engaged and involved in different activities of job. Therefore, there is an increase in the organisational performance as the employees engaged to the fullest. However, in the times of corona pandemic, companies and employees came to a standstill because of the adverse effects of the pandemic. Hence, there is a decrease in organizational performance due to a decrease in employee engagement. In connection to this, the studies of Blustein and Guarino (2020) detailed that Covid-19 induced enormous joblessness worldwide.

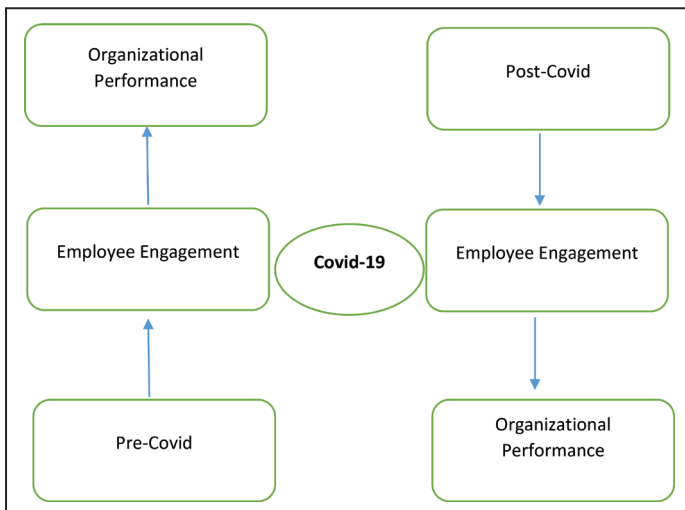


Figure 4. Effect of Covid-19 on Employee Engagement and Organisational Performance.

Source: Developed by the researcher.

The whole work engagement of corporations came to a halt and so the performance of the organisation came down. Thus, Covid-19 activated the hardship of the employee and work engagement of the businesses. From the reviews of Shahid (2019), it has been apparent that due to the absence of internet connectivity and idleness among staff the work of businesses is ruined some way. In connection to the performance of the company and employees, firms fired their personnel by plotting the influx of the outcomes. It has been also observed that work from home is also related with many drawbacks, which contain lack of public communication, lack of interaction, trouble in the arrangement and management of work, loss of efficiency, etc. Thus, Covid-19 decreases the employee engagement and organisational performance.

Research Objectives

1. To identify the nature and features of employee engagement.
2. To find out the effects of Covid-19 on employee engagement in the context of work-from-home practices.
3. To analyse the importance of employee engagement.

Research Methodology

The current study is based on concepts and facts that are descriptive literature review consisting of secondary data and is conceptual in nature. According to Gilson and Goldberg (2015) conceptual papers are the bridges gap between the

existing theories and the disciplines and also they provide a multi-level insight along with broad thinking. Conceptual articles get systematised various unpredictable torrents to provide some new understanding (Cher Mack). Researchers using conceptual papers can find valuable advices on problem solving, theorising and concept developing (Alvesson & Sandberg, 2011). The data collected was obtained from various research studies carried out by various academicians and researchers. Majority of the data is taken from the survey, documents, objects and wired reporters which provided insights into the concepts and effects of employee engagement and its factors related to Covid-19 pandemic. About 30% of data is collected from Journals of Emerald Publications, 40% is collected from Research Gate (Google Scholar), 20% is gathered from articles and blogs and 10% is gathered from newspapers. Publications of the World Health Organization are also used to gather the data on Covid-19. A systematic and extensive studies examination was undertaken related to the engagement of employees. The purpose of the literature review is to develop a distinctive method of exploration that generates original thoughtful information about the subject revised. The current study is based on concepts and facts that are a little more descriptive.

Findings and Discussions

Employee engagement is the emotional, physical and cognitive promise of the employees to the organisation (Kahn, 1990). It is also behavioural and intellectual commitment. It is a connection between employees and companies. There are many factors held responsible for the employee engagement which leads to positive outcomes like productivity, profitability, customer satisfaction and shareholder return. The study is intended to understand what is employee engagement, and how employees are engaged in the strict lockdown and work from home. It also sheds light to understand and measure the level of engagement and provided tools and techniques to improve and intensify the stage of engagement, which ultimately refers to the organisational commitment and organisational sustainability. In this period of Covid-19 in working at home regime, engaging employees was a difficult task engagement, which is not given much importance, and in most of instances it is in fact overlooked.

The study found that employee engagement is a constructive satisfying condition of mind leading to an increase in managerial enactment. The present work determines the strategies of employee engagement an affirmative impression on employees and organisational performance as well. The research also found that the employee engagement is significant and positively correlated to the organisational performance but in the times of Covid-19 the organisational performance is reduced due to low and poor employee engagement. It also found that Covid-19 has badly affected employee engagement and negatively impacted the organisational performance. Therefore, the current study is filling the gap by providing desired and required tools and strategies like flexible working hours, the balance of work, the balance of pay, recognition, timely appraisals and promotions, which created a positive behaviour and energy in employees to get engaged and bring results.

Covid-19 are not an exception investment for the same after globalisation, employees are secured with guaranteed salary increases through dearness allowances and annual incentives compared to pre-Covid-19 period but in the current situation of work from home, salary hike is linked with engagement that involves continuous involvement, participation, commitment and demands knowledge sharing and knowledge integration that has an impact on performance of the employees and the organisations as well. Employees working in offline mode and encompassing physical activities is entirely a different scenario where bringing a result is quite easy, guaranteed salaries and benefits but in this situation there may be possibilities of loss of energy and escapism in discharging their duties, which may affect the entire business or profitability and productivity. To meet such needs and demands of the global competition, there is a strong need to work on the concept of engagement in times of work from home to improve and proliferate the level of involvement and participation of employees in the organisation. Organisations should always come up with continuous regulators, which enhances the commitment and arrangement, regardless of the sort of the workforce whether online or offline/office or home.

Table 1 highlights some of the strategies that can be adopted by organisations to ensure employee engagement while on a practice of work from home.

Table 1. Strategies of Employee Engagement while Working from Home.

S/N	Strategies
1	Electronic talks
2	E-conference with business specialists
3	Records files, online-learning
4	Self-developed content to their employees
5	Motivation
6	Take out fears from the mind of employees
7	A positive, safe and secure environment
8	Motivate the workforce by podcasts and live calls
9	Incorporating job rotation
10	Flexible work arrangement
11	Mentorship programmed
12	Digital learning process to upgrade the skill
13	Learn new skill
14	Providing learning opportunities
15	Summing up of resources for nonstop growth and development
16	Virtual meetings
17	Round table conferences virtually
18	Focus groups
19	Employee survey
20	Online family engagement recognition
21	Kids management
22	Baby sittings

(Table 1 continued)

(Table I continued)

S/N	Strategies
23	Mother and child arrangement
24	Brainstorming
25	Online apology and appreciation
26	Healthiness and cleanliness maintenance
27	Digital learning preparation units
28	Intranet direction for workout and reflection
29	Online feedback, online competition and challenges
30	Virtual interactions and counselling
31	Anxiety and stress management

Source: Developed by the Researcher.

Organisations tried hard to maintain their employees engagement with different strategies to manage organisational engagement and cope up with the covid stress (Chanana & Sangeeta, 2021).

Many organisations underwent various online training programme, live sessions expert talk, psychological problems, helplines platforms for solving problems, societal engagement and visual ways of engagement for working the organisations (Mukherji, 2021). According to Hudaya et al. (2020) by means of e-learning staff increased knowledge needed skill learned without disturbing the work process irrespective of time and space, stressed the importance of various strategies like e-learning, conference, digital learning and new skill development on engaging the employees during Covid-19. According to Sharvi Jain (2021), different strategies like leadership, mentoring, positive attitude, psychological therapies and decision-making skills helped to a high heel in solving the high standards and facing unique challenges during the period of coronavirus pandemic to make employees engage. According to Alex et al. (2021), regular leadership communication, open door policy, emotional support and making coaching a team-based effort are some of the tactics applied by the organisations to fight with the challenges of global pandemic. According to de-la-Calle-Durán and Rodríguez-Sánchez (2021) a 5C model has been developed to study the engagement problems during global pandemic. The 5C are conciliation, cultivation, confidence, compensation and communication, which are very essentials to virtually engage employees to have organisational performance, which is also a parameter of staff health and well-being. According to Swaminathan Mani and Mridula Mishra (2020), employee engagement during the period of crisis and unprecedented proportion was possible by leveraging some tools and techniques on morale, and motivation of the employees by developing a strategic framework, which includes employee interventions as team interventions. Engagement is enhanced by taking out fears, providing positive attitude, motivation and morale boosting. Anasori et al. (2022) focused on a few strategies of engagement like psychological distress, resilience and employee mindfulness in enhancing engagement during the times of pandemic in order to give job-related outcomes According to Mahajan et al. (2021), employee engagement in educational institutions also used various

avenues for the faculty members to get engaged and perform their duties even in the lockdown by the use of technology for conducting lectures, examinations and meetings that have been unavoidable. Online feedback, online competition, virtual meets, online challenges, interactions and counselling were the important tools to get engaged and committed.

Suggestions and Recommendations

The study had found few tools and techniques to make employees work from home and get engaged, viz., creating a strong secure and safe work environment, establishing a routine, should be active socially and having greater communication, supporting well-being activities, technology investment, work-life balance, professional and personal time, emotional study and behavioural modification study. Sarkar (2020) found that new dimensions approved by the groups are domestic appointment and kids' management, allowing the staff to work from home. According to reviews of Talukar (2022), organisation should follow a few things like developing a healthy communication protocol with teams and clients, giving a continuous note of appreciation and encouragement, flexible working hours and standards, building an online community with the workers, conferences and virtual meets, online platform gatherings and discussions and timely payment without delay. Goswami (2020) study is pointing on engaging downtime employees and continuous wisdom and growth keeps employees productive and engaged throughout the work-from-home practices. In view of the coronavirus environment, the study also provided the companies with electronic talks, e-conference with business specialists, records files, online-learning, self-developed content for their employees, motivation, take out fears from the mind of employees, provide a positive, safe and secure environment, keep motivated the workforce by podcasts and live calls. Organisations must develop new tools and leverage imaginative strategies such as incorporating job rotation, flexible work arrangements or mentorship programs, digital learning process to upgrade the skill and learn a new skill, providing learning opportunities, summing up resources for nonstop growth and development during work-from-home practices to increase engagement and provide continuous involvement. In addition, encourage the employees to participate in virtual meetings, round table conferences, focus groups and employee survey.

Conclusion

Employee engagement has become an important subject in this tough period of Covid-19. Organisation ranking high and thinking of moving to a higher position would be a mere dream without the support of employees and their engagement in this pandemic. The importance of employee engagement has gained a vast importance, and success of the companies largely depends on it. That is the reason why businesses should look after how to retain their staff engaged, encouraged, dedicated, fulfilled and technologically advanced in the regime of work-from-home based during lockdown. It has become an important challenge for the companies

to engage the employees during this pandemic and establish the new measures for the engagement. The theoretical implication states that Employee Engagement increases the faith, obligation, and trust that give employees proper understanding and awareness about innovation to produce better-quality resolutions and outcomes. The study found that employee engagement and its factors have a direct and significant effect on organisational performance. In this uncertain period of coronavirus pandemic, the organisations have taken a big dig in terms of increment and innovation, which led to overall downsizing. The study also found that the employee engagement is significant and positively related to the organisational performance, and in the times of Covid-19 the organisational performance is reduced as the employee engagement became low and poor.

The reasons behind the disengagement in the era of Covid-19 may be due to skill gap, less competition, poor execution planning, strictly limited budget, lack of growth and opportunities, and less coordination and communication among the employees. Once these aspects are studied and analysed, listening to employees and implementing flexible solutions that align with their needs, help, drive commitment and loyalty. Based on the findings of the above activities, the targeted, focused, strategic and engaged workforces can be created

Declaration of Conflicting Interests

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Dynamics of Trade Agreements, Trade and Investment in South, Southeast and East Asia

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Abstract

South, Southeast and East (S, SE and E) Asian economies comprise a number of emerging economies that are significantly contributing to the world market. Asian economies are coming up with strong policy frameworks to strengthen trade and investment. Simultaneously, Asian economies (S, SE and E regions) are strategically negotiating a number of vital intra-regional as well as extra-regional trade agreements (RTAs) with an intent to not only boost trade but also to provide an environment for investors to stimulate foreign direct investment (FDI) flows. The study examined the trends and dynamics of regional integration, trade and investment in the said Asian region. The trend for RTAs indicates that economies in S, SE and E Asian regions have negotiated a significant number of bilateral and plurilateral trade agreements. Moreover, export values of three significant RTAs (Association of Southeast Asian Nations [ASEAN], Asia Pacific Trade Agreement [APTA], and South Asian Association for Regional Cooperation [SAARC] trading bloc) in the region suggest that export performance of ASEAN and APTA vis-à-vis intra-bloc and the world at large has been far better than the SAARC trading bloc. The dynamics of trade and investment suggest that East Asian economies are contributing a significant percentage to world trade and investment, and Southeast Asian economies are slowly improving trade and investment trends. However, Southern Asian economies need to revisit and revamp existing trade and investment policies to gear up trade and investment flows.

Keywords

Trade, FDI, trade agreements, Asian

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Introduction

Each economy is unique having distinctive features in terms of geographical distribution, cultural heritage, historical diversity, technological development and political arrangements (Shu, 2018). Economies either produce or import (Thirlwall & Gibson, 1992) depending upon the indigenous expertise of an economy. In the case of expertise, economies prefer self-production whereas economies do import wherein limitations associated with domestic production are viewed. Hence, a global market for trade and investment is inevitable. In addition, to facilitate the global market, economies world over are working towards reducing trade barriers. Moreover, globalisation wave has encouraged economies world over to actively participate in trade agreements (Bhasin & Manocha, 2014), tax treaties, investment treaties and other measures to boost the global market. Trade agreements and investment treaties not only act as a tool of navigating foreign markets but also provide benefits associated with reduction of barriers (tariff and non-tariff).

‘The World Trade Organization (WTO¹) is the only global international organisation dealing with the rules of trade between nations’. Regional trade agreements (RTAs) (also popularly known as free trade agreements [FTAs]) are trade agreements negotiated under the aegis of WTO among nations to liberalise tariff and non-tariff barriers to facilitate the flow of goods and services. Hence, RTAs are building blocks (Baldwin, 2006). With the changing dynamics on the world map RTAs currently negotiated under WTO not only cover trade-related liberalisation measures but also capture the norms to stimulate investment and service flows among nations. New age RTAs are getting expanded and hence ‘new regionalism’ era (Cihelkova & Frolova, 2014; Cihelková & Hnát, 2008) can be identified and, therefore, more coverage and attributes can be stated as follows:

1. Coverage of ‘new integrations’ are getting more elaborated and, hence, along with trade other significant aspects such as environment, investment, technical barriers, services, intellectual property and various other dimensions are enveloped.
2. Second, RTAs formed are more diversified and sophisticated in nature. Along with trade-in-goods agreements, trade-in-services/economic integration agreements (EIAs) are also gaining popularity.
3. Third, RTAs are not only restricted to a given geographical boundary or cultural similarity. New regionalism has facilitated RTAs among countries across the ocean and cultural frames, hence, cross-regional (Crawford & Florentino, 2005) and inter-regional RTAs can be negotiated.
4. Moreover, trading partners are negotiating multi-phase (bilateral, multilateral, and plurilateral) RTAs.
5. Last, RTAs are negotiated among economies with social, cultural and economic diversity and, hence, developed and developing economies are equally negotiating trade agreements in order to promote trade without barriers across the globe.

Therefore, economies across the globe can experience various advantages, namely, reduction in the price associated with distribution and consumption of goods and services; ease in the flow of factors of production, goods and associated services; extended markets; and better trading mechanisms across the globe which in turn has promoted global productivity and supply chains (Thomas, 2014). Moreover, trade blocs have been promoting an environment wherein the members of a bloc are encouraged to jump the boundaries of the partner countries (due to supportive policy measures among the members of a bloc) and, hence, stimulate investment along with trade (Park & Park, 2008). Hence, trade blocs are platforms that promote trade and investment-friendly environment among member nations.

Rationale of the Study

Following the world trends (post-liberalisation era), Asian economies have also taken a number of initiatives to stimulate trade and investment via various policy measures and, hence, have actively participated in the formation of various intra-regional and extra-RTA. As per the Asian economic integration report (ARIC, 2023), Economic Union (EU) and North American intra-regional trade remained stagnated over the last three decades whereas Asia's intra-regional trade has witnessed a steady rise. Further, the report stated that Asian global value chains and regional value chains have seen a massive boost in the said region. Hence, a linkage in trade; production process; investment opportunities; capital flows; liberalisation measures; and deeper economic integrations are gaining momentum. In the given scenario, Asian economies are significantly contributing to trade, investment and other macroeconomic variants. As per Finance and Development² (a quarterly magazine of IMF), Asia is emerging as one of the key players in the world economy with three major (China, Japan and India) boosting economies and with a share of more than 35% of the world's GDP. Workman (2022) suggested that Asian economies accounted for USD 8.512 trillion in exports to the world in 2021 leading to a growth of 34.1% growth of Asian exports since 2017. Similarly, as per ESCAP-75 (2019), the share of Asia-Pacific world FDI (foreign direct investment) inflow share has dropped to 35% (in 2019) from 45% (in 2018) and FDI outflow share has decreased to 41% (in 2019) from 52% (in 2018) but the region still manages to bag the largest share of world FDI flows. Further, as per ESCAP (2021), Asia has emerged as the top most destination for FDI inflows as China (in East Asia) and India (in South Asia) have seen a rise of 23% and 20% since the last two decades. Therefore, to study the changing dynamics of emerging economies of Asia, the coverage of our study extends to identify the role, nature and trends of trade, investment and trade agreements for South, Southeast and East (S, SE and E) Asian economies.

Literature Review

The present study attempts to examine the trends and changing dynamics of trade, investment and trade agreements in S, SE and E Asian economies. Therefore, we

divide our LR into three subsections, namely, studies examining trade trends; studies capturing investment trends; and studies roping trends of RTAs.

Studies Capturing Trade Trends

We were able to have our hand on a few studies that have examined trade trends for country-specific and region-specific sample sizes. Starting with the studies examining country-specific trade trends. Adebayo (2019) examined the trade trends and policies for Nigeria over the period of 1981–2017, and the results depicted that trade trends are compatible with sustainable development of Nigeria. Rafiq et al. (2016) evaluated the trends of trade balances for Pakistan over the period of 1972–2015 and the forecasts suggested that policymakers need to work towards improving trade balances. Shree and Sridhar (2016) evaluated the trends of livestock products for India over the period of 20 years and stated that both the exports and imports of livestock products have increased for India largely due to an increase in income and changes in the preference for dairy products. Kunze (1972) evaluated the trends of trade between Britain and Eastern EU countries over the period of 1960–1971. The results suggested that the rise in trade is largely due to consistent efforts on the part of Britain's government and Britain's corporate houses. Islam (2019) captured the trends of trade between Bangladesh and India over the period of 2009–2016 and concluded that India holds a strong place in Bangladesh's international trade. Taneja et al. (2019) explored India-Pakistan trade trends over the period of 2012–2017 and suggested that informal channels rather than formal channels are dominating India-Pakistan trade. Manocha and Bhasin (2022) studied the trends of India-UK trade over the period of 1991–2021 and stated that both counties are strategically working to enhance trade.

Few studies have also captured the trends of trade with region-specific sample sizes. Dimitris and Pinna (2013) examined the trade trends between the EU and its neighbouring economies over the period of 1991–2011 and stated that the EU can explore exponential trade with its neighbouring countries in the years to come. Similarly, Oehler-Sincai (2009) explored the trends and structure of trade-in-goods for EU countries over the period of 2004–2008 and indicated that EU trade is more inclined towards manufacturing goods both for exports and imports. Straubhaar (1986) explored the nature and trends of trade between developing economies over the period of 1969–1983. Borin et al. (2018) examined the world trade trends over the period of 2011–2016 and suggested that cyclical factors have contributed to weakness in world trade. Similarly, Nikoloski and Paceskoski (2015) evaluated the trends of world trade over the period of 1937–2013.

Studies Capturing the Investment Trends (FDI Trends)

Like trade, investment-related trends have also been explored by a few researchers both for country-specific and region-specific sample sizes. Sahiti et al. (2020) examined the trends of FDI inflows for Kosovo over the period of 2006–2017 and

concluded that FDI received in Kosovo is catering to business sector, rental sector and real estate. Ergano and Rambabu (2020) examined the pattern and trends of FDI inflows of Ethiopia from India and China over the period of 1997–2016. Molla (2018) studied the trends of FDI for Bangladesh over the period of 2008–2018 and suggested that FDI inflows are significantly contributing towards the sectors that are contributors of economic growth. Bista (2017) explored the trends of FDI inflows for Nepal over the period of 1982–2007 and suggested that liberalisation and privatisation measures are contributing towards FDI inflows in Nepal. Rao and Dhar (2011) studied the trends of FDI inflows for India and stated that liberalisation policies and mergers and acquisitions have strengthened FDI flows for India.

Regional-specific FDI flows have also been explored by a few researchers. Chattopadhyay et al. (2022) examined the trends of FDI inflows for BRICS economies over the period of 1990–2020 and concluded that BRICS economies need to bring better and enhanced reforms to attract FDI inflows in future. Similarly, Bose and Kohli (2018) examined the trends of FDI for BRICS economies over the period of 1990–2015. Hattari and Rajan (2008) evaluated the trends of FDI inflows into developing Asian economies and stated that developing economies are emerging hubs for FDI inflows. Daisuke (2006) evaluated outwards FDI from Association of Southeast Asian Nations (ASEAN) economies and intraregional ASEAN investment trends and suggested that ASEAN countries are emerging as regional and global players of FDI. Like global trade trends, global investment trends have also been examined by a few researchers. Banik and Bhaumik (2006) evaluated the global FDI trends and concluded that FDI inflows and outflows are enhancing the world over but the growth rate of FDI inflows has declined in 2003 as compared to FDI inflows in 2000. Fischer (2000) examined the global FDI trends since 1990 and suggested that economic integrations are supporting interdependent production and service networks and, hence, an increase in FDI trends on the world map can be seen.

Studies Associated with Trends of RTA

This section of the literature review captures studies that have discussed the trends of RTAs. Haokip (2012) examined the trends of RTAs for India starting from the end of the Cold War and stated that India's Look East policy is the result of India's attempt to expand regional integrations with East and Southeast Asian countries. Sapkota et al. (2018) examined the trends of RTAs in the Asian region over the period of 1990–2015 using a sample of 34 Asian countries and revealed that integrations are increasing within Asian region. Kirillov and Paweta (2014) examined the changing trends of work economic integrations and the study employed a few major RTA and concluded that countries that are geographically near and with similar economic development tend to form unions. Sakakibara and Yamakawa (2003) examined the challenges and opportunities of regional integration in East Asia and stated that the East Asian region is stimulating both global and intra-regional RTAs. Park et al. (2021) examined the integrations in the Asian and European regions and stated that Asian economies are opting for loose

cooperation whereas the European region is strengthening institutionalisation with a single currency setup. Kawai and Wignaraja (2010) evaluated the trends and challenges of FTAs in the Asian region and suggested that political considerations are required to come up with better and strong FTAs in the said region.

An insight into the literature indicates that studies have either captured trends for trade, or investment, or RTAs by employing varied sample sizes. Talking about the Asian region, both country-specific and region-specific studies are accessible. Rafiq et al. (2016) evaluated trade trends for Pakistan; Islam (2019) studied the trade trends between India and Bangladesh. Similarly, Molla (2018) studied the FDI trends for Bangladesh; Bista (2017) explored the FDI trends for Nepal; Rao and Dhar (2011) studied the FDI trends for India. Further, Hattari and Rajan (2008) evaluated the FDI trends for developing Asian economies. Sapkota et al. (2018) and Kawai and Wignaraja (2010) examined the trends of RTAs in the Asian region. But an aggregate study capturing the trends for trade, investment and RTAs for S, SE and E Asia was not found; therefore, the current study attempts to capture the changing dynamics of trade, investment and regional integrations in the said region.

Data Source

To study the trends and changing dynamics of RTAs in S, SE and E Asian regions vis-à-vis trade, investment and trade agreements, the data was collected from varied sources. RTA-associated data was collected from the WTO database over the period of 1991–2022. To gather intra-ASEAN, intra-SAARC (South Asian Association for Regional Cooperation), intra-APTA (Asia Pacific trade agreement) export values, data was collected from the trade map (ITC) database over the period of 2002–2021 (based on the availability of data). To study the regional flow of imports and exports, data was collected from the UNCTAD database over the period of 1991–2021; and to study the trends of FDI inflows and outflows of S, SE and E Asian region, data was gathered from FDI statistics UNCTAD database over the period of 1991–2021.

Scope of the Study

To study the changing dynamics of S, E and SE Asian trade and investment markets since 1991, the current study intends to talk down the trends of trade, investment and trade agreements in the said region. Moreover, the study aims to study the changes in the nature (quantity and quality) of trade agreements in the region. Hence, we can list the objectives of the study as follows:

1. To identify the trends of trade agreements in S, E and SE Asian regions with major emphasis on three major RTAs, namely, SAARC trading bloc; APTA; and ASEAN.
2. To tabulate and identify the changing dynamics of trade and investment in the said region.

Trade Agreements (Trade Blocs) in S, E and SE Asian Regions

Trade agreements are negotiated to stimulate trade, liberalise trade barriers and enhance market access (Mukherjee et al., 2019). Countries negotiating trade agreements under the umbrella of WTO have an intent to provide more and better access to the member countries of the bloc towards the domestic market vis-à-vis the rest of the world. However, trade agreements may differ in nature/type depending on the extent and depth of liberalisation among the member countries (World Bank, 2005). The most elementary and easily negotiable trade agreement is FTA wherein the member countries opt to liberalise tariff barriers among the member nations either for a few or all goods. The next level of integration can be associated with Custom Union (CU). CUs are like FTA but member nations part of CU further extend the liberalisation measures and tend to enforce common trade policies among the member nations. As compared to FTA, CUs are more difficult to conclude. The next stage of integration is associated with Common Market (CM) wherein not common trade policies are structured but also a free movement of labour and capital among the bloc members is promoted. Though CM requires a major negotiation platform, this stage of integration provides no restriction on immigration, emigration and cross-border free movement of labour and capital among member countries. A deeper stage of integration in form of the EU can also be recognised. EU supports a common monetary and fiscal policy among nations of the bloc and supports identical tax structures, fixed exchange rates, free currency convertibility and free movement of capital for all members of the bloc. The last and deepest stage of integration is associated with Political Union (PU). With PU, member countries tend to form a common government and single constitution, but a major dilution of the sovereignty and democratic rights of the member countries is registered. Apart from the above-stated integration, Partial Scope Agreements (PSA) are also negotiated under the umbrella of WTO. PSA also known as preferential trade agreements (PTA) are like FTA wherein the member nations try to reduce tariff barriers for a few products rather than *all* traded products. In addition to the above, EIAs are also noted with WTO that cover trade in services, unlike FTAs that are largely associated with trade in goods. Figure 1 depicts a pictorial representation of various trade agreements based on the stage (and nature) of integration.

Each stage of integration has its own attributes and advantages, and with the depth of integration more intra-bloc liberalisation among the members of the bloc can be seen. As per WTO,³ currently (as of 31st March 2022) 354 trade agreements are in force that corresponds with 577 notifications and separating counting goods, services and accessions. The sizeable number of RTAs on the world map indicates an urge among the economies to open gates for investment, goods, services and various other parameters of the global market. Further, the new generation (currently) RTAs that are more diversified in nature and have coverage of not only trade-in-goods but also other dimensions of the global market such as trade-in-services, environment and investment provisions (Wu et al., 2017) are seen.

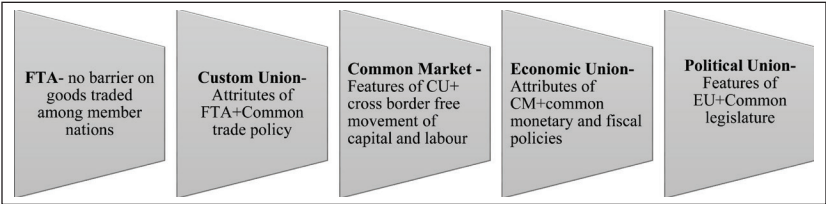


Figure 1. Stages of Integration.

Table 1. RTAs Negotiated (and in Force) in South, Southeast and East Asia (Cumulative Year-Wise 1991 Onwards).

Year	Cum # of RTAs (Intra- and Extra-Regional
1991	4
1994	6
1999	7
2001	9
2003	16
2005	26
2007	41
2009	55
2010	62
2012	72
2013	77
2015	83
2016	86
2017	88
2018	92
2019	99
2020	102
2021	109
2022	110

Source: Based on the data collected from the WTO RTA database.

Following the world trends, a diverse range of RTAs are also negotiated (and are in force) in the Asian subcontinent where a number of emerging economies (India, China, Japan, Korea, Singapore, Thailand, etc.) are trying to strengthen growth parameters vis-à-vis world at large and, hence, are coming with a reasonable number of intra-regional as well as extra-regional RTAs. More than 100 RTAs are negotiated (and in force) in S, SE and E Asia (see Table 1).

An upsurge in the number of RTAs negotiated in the region indicates an environment that boosts trade, investment, economic growth and social welfare. A number of significant bilateral (Japan-India, Republic of Korea-India, Japan-Malaysia, Japan-Indonesia and many more) and multilateral (ASEAN, APTA, SAPTA, RCEP [Regional Comprehensive Economic Partner]) RTAs have been negotiated in the said region. Furthermore, the countries within S, SE and E Asia are not only negotiating intra-regional RTAs but are also actively participating in

Table 2. Region-Wise Countries.

Regions →	Southeast Asia	East Asia	South Asia
Countries →	Brunei Darussalam; East Timor; Cambodia; Laos; Myanmar (Burma); Philippines; Thailand; Vietnam; Singapore; Malaysia; and Indonesia.	China; Republic of Korea; Mongolia; Japan; and Taiwan	India; Afghanistan; Iran; Bangladesh; Bhutan; Maldives; Nepal; Sri Lanka; and Pakistan

Source: Based on data collected from the UN geographical regional classification.

negotiating RTAs with economies world over/cross-regional (Japan-UK, New Zealand and Japan-Australia). Moreover, Asian economies are looking for deepening the existing integrations, SAPTA (a regional bloc among SAARC countries) formed FTA, South Asian Free Trade Agreement (SAFTA) in 2006 and similarly, ASEAN expanded its country coverage in 2022 to form RCEP. As per World Bank,⁴ regional integrations world over are getting deeper and more expanded, and hence are better devices for trade and non-trade cost reduction and global supply chain boosters (de Melo et al., 2020). They are also coming up with a cross-country policy balancing platform, especially for member countries. Furthermore, to stimulate economic growth, Asian economies are trying to minimise divergence. As per the WTO database, Asian economies are registering as the second largest hub of RTAs followed by European countries. Therefore, they are actively stimulating the quality and quantity of RTAs, bilateral investment treaties, investment and environment agreements, and EIA in the said region.

As the study tries to briefly capture the changing dynamics of regional integration in S, SE and E Asian regions therefore few subsections have also been captured to discuss the emerging and existing RTAs region-wise (SE, S and E Asia). Therefore, the study tabulates and discusses the number of RTAs negotiated (and in force) for countries within the regions under study and also tries to talk about significant and grooming RTAs in S, SE and E Asia. To identify countries within each region, the United Nations’ geographical regional classification has been opted for. Table 2 tabulates countries region wise.

RTAs in Southeast Asia

The Southeast Asian region is not only acting participating in strengthening trade and investment relations but also significantly contributing towards negotiating some vital RTAs both intra- and extra-regional (such as ASEAN, RCEP and others). Table 2 depicts the countries that constitute Southeast Asia, and Table 3 tabulates the number of RTA in force and negotiated country wise within Southeast Asian economies. Table 3 depicts that not only Singapore has negotiated the highest RTAs in SE Asia but countries such as Brunei, Myanmar, Laos, Vietnam,

Table 3. RTAs Negotiated by Southeast Asian Economies (as of 30th September 2022).

Type of RTA → Country ↓	Trade in Goods (Including Accession) (Including Both PSA and FTA)	Trade in Services (Including Accession)
Brunei Darussalam	10	8
Cambodia	7	5
Philippines	11	7
Thailand	14	9
Viet man	15	11
East Timor	0	0
Indonesia	13	8
Laos	10	6
Malaysia	16	11
Myanmar	8	5
Singapore	27	24

Source: Based on the data collected from the WTO RTA database.

Malaysia, Thailand and Philippines are also following the race with 10 or even more than 10 RTAs negotiated as of 30th September 2022.

Furthermore, 10 leading economies of Southeast Asia have negotiated a vital RTA, ASEAN Free Trade Area (AFTA) in 1992. AFTA was initially negotiated among six Southeast Asian economies, namely, Brunei Darussalam; Malaysia; Indonesia; Thailand; Philippines; and Singapore but subsequently, Vietnam became part of ASEAN in 1995; Laos and Myanmar joined in 1997; and Cambodia entered in 1999. Currently, ASEAN has 10 signatories from the Southeast Asian region, namely, Brunei Darussalam; Laos; Philippines; Malaysia; Indonesia; Singapore; Thailand; Vietnam; Myanmar; and Cambodia. Furthermore, as of 30th September 2022, ASEAN is one of the signatories of six vital RTAs, out of which one is plurilateral RTA (ASEAN-Australia-New Zealand negotiated and in force since 2010) and five are bilateral RTA, namely, ASEAN-China (in force since 2005); ASEAN-India (in force since 2010); ASEAN-Japan (in force since 2008); ASEAN-Hong Kong, China (in force since 2019) and ASEAN-Republic of Korea (in force since 2010). ASEAN countries are stretching their arms to cover various intra-regional as well as extra-regional economies to facilitate trade (and investment) in compatible environment.

ASEAN has also worked upon various expansion forums, namely, RCEP (a platform for ASEAN+6) and ASEAN plus three (APT) (China, Japan and the Republic of Korea). APT is currently a cooperation forum initiated to address the financial crisis in the East Asian region and the forum is committed to taking care of issues such as energy, reduction of economic inequalities, inter-country labour mobility, poverty concerns, environmental and sustainability issues, transnational criminal activities and many more.⁵

However, RCEP was a step ahead to further strengthen Southeast economies and to provide more meaning to ASEAN economic potentials. Japan took the lead to establish a trade agreement among 10 ASEAN members and 6 vital economies. In 1992 at the ASEAN summit, negotiations for RCEP formally began. RCEP was

initially proposed FTA among ASEAN and six emerging economies, namely, Japan; China; New Zealand; Australia; India; and Republic of Korea. However, India stayed away from the RCEP, and RCEP came into force (in 2022) with 15 countries (10 ASEAN and Japan; China; New Zealand; Australia; and the Republic of Korea). With RCEP, the socio-economic coverage of ASEAN enhanced as RCEP covers 30% of the world population and accounts for 30% of the world GDP⁶ leading to the formation of a strong regional integration in the Asian Continent.

RCEP came into force in 2022; therefore, potential gains and growth of the regional bloc can be studied in the years to come. However, currently, we can tabulate intra-ASEAN exports, and ASEAN export trends vis-à-vis world at large. A tabulation (see Table 6) of intra-ASEAN exports suggests that ASEAN exports among ASEAN economies have grown around 4.02 times since 2002. Moreover, intra-ASEAN exports account for around 20% of ASEAN world exports in 2021. Though the agreement has large regional diversity among member nations but intra-ASEAN export trends indicate that the agreement is likely to emerge as one of the most durable and successful RTA in the years to come (Hill & Menon, 2010).

RTAs in East Asia

People’s Republic of China; Republic of Korea; Mongolia; Japan; and Taiwan constitute Eastern Asian economies. The region carries three most significant economies, namely, China; Korea; and Japan. These three economies are leading the tally of RTAs negotiated in the region (see Table 4).

As of 30th September 2022, these three major economies of the East Asian region have negotiated more than 15 RTAs individually (see Tables 3 and 4). Furthermore, China; Republic of Korea and Japan have bilateral RTAs with ASEAN and are also members of currently negotiated (in 2022) RCEP. Such trends suggest an intent of Eastern Asian economies to extend trade liberalisation measures towards all neighbouring economies of Asia and even, collaborate with cross-continent economies to negotiate trade agreements. The trends also suggest that East Asian economies are looking for better trade partners to emerge as vital and strong economies of Asia. Eastern region also accounts for various significant intra-regional as well as extra-regional RTAs namely, China-Singapore; Japan-Korea;

Table 4. RTAs Negotiated by Southeast Asian Economies (as of 30th September 2022).

Type of RTAs → Country ↓	Trade in Goods (Both FTA and PSA) (Including Accession)	Trade-in-Services (Including Accession)
Japan	18	17
Korea	21	18
Mongolia	0	0
People’s Republic of China	17	16
Taiwan	0	0

Source: Based on the data collected from the WTO database.

and many more. However, countries like Mongolia and Taiwan still need to gear up towards trade progressive measures.

RTAs in Southern Asia

As per UN geographical regional division, India; Afghanistan; Iran; Bangladesh; Bhutan; Maldives; Nepal; Sri Lanka; and Pakistan comprise of South Asia.

Tabulation (see Table 5) of RTAs in South Asia depicts that India has negotiated the largest number of RTAs and, currently, India is member of 20 trade-in-goods agreements and 8 trade-in-services agreements. Countries like Afghanistan and Maldives are still struggling to open gates for trade liberalisation and, hence, have negotiated very few RTAs as of 30th September 2022. Furthermore, in comparison to Southeast and East Asian economies, the South Asian region has negotiated lesser RTAs but almost all South Asian economies are members of the SAARC trading bloc. SAARC was a political platform formed in 1985 to stimulate regional strength and economic synergy among South Asian economies. SAARC was initiated with an intent to provide a political and economic forum for South Asian economies to build a strong, healthy and progressive environment in the region. However, in 1995, SAARC countries decided to initiate trade liberalisation measures and, hence, negotiated a PTA, SAPTA (Chowdhury, 2005). SAPTA came into force in December 1995 and had seven member nations of South Asia as its members (Bangladesh; Bhutan; India; Maldives; Nepal; Pakistan; and Sri Lanka). To further boost growth, SAARC countries in 2006 negotiated an FTA, South Asian Free Trade Area (SAFTA). SAFTA was a deeper integration wherein all members agreed to systematically reduce trade duties. In 2007, Afghanistan joined the SAARC club and became the eighth member of SAFTA. The key aspect of SAFTA formation was to promote the tariff liberalisation program wherein the member countries were committed to substantially reduce and remove tariff structure among the bloc members (Raghurampatruni et al., 2021). Table 6 shows that the intra-SAARC export value has increased 10 times in 2021 since 2002 but the intra-SAARC export to the world export is still as low as 7%. Currently (in 2021), total intra-SAPTA exports amount

Table 5. RTAs Negotiated by South Asian Economies (as of 30th September 2022).

Type of RTA→ Country↓	Trade in Goods (Including Accessions) (Included PSA and FTA)	Trade in Services (Including Accessions)
Afghanistan	3	0
Bangladesh	7	1
Bhutan	4	0
India	20	8
Iran	3	0
Maldives	3	0
Nepal	4	0
Pakistan	11	2
Sri Lanka	8	1

Source: Based on the data collected from the WTO database.

Table 6. A Comparative Tabulation of Intra-SAARC, Intra-APTA and Intra-ASEAN Exports (2002–2021).

Year	Intra-SAARC Exports (in USD)	Intra-APTA Exports (in USD)	Intra-ASEAN Exports (in USD)
2002	3,281,985	49,936,447	91,933,999
2003	5,544,193	70,655,317	116,864,444
2004	6,650,179	99,462,078	142,080,557
2005	8,881,239	128,151,973	166,106,846
2006	9,726,940	154,979,212	192,318,298
2007	11,990,903	193,084,109	217,684,856
2008	15,086,305	235,269,203	253,516,864
2009	11,772,902	205,139,525	200,519,633
2010	16,280,481	278,141,160	265,006,767
2011	19,734,108	324,758,185	316,202,214
2012	19,983,900	325,087,034	327,120,263
2013	22,644,611	347,666,280	339,384,519
2014	25,852,608	366,229,746	331,479,171
2015	22,860,858	357,955,204	281,633,360
2016	22,474,793	338,544,689	271,572,728
2017	26,082,163	383,451,528	311,535,430
2018	31,728,444	429,230,690	348,755,616
2019	29,146,973	402,030,593	331,188,548
2020	24,703,070	385,014,970	297,612,268
2021	39,081,084	513,766,461	370,479,081
Increase in intra-bloc exports since 2002 (proportional increase)	11.9077583	10.2884064	4.02983755
Bloc to world exports (in 2002)	60,328,961	548,300,271	401,129,095
Bloc to world exports (in 2021)	493,662,063	4,472,824,827	1,794,612,574
% Share of intra-bloc exports to world exports (in 2002)	5.440%	9.107%	22.919%
% Share of intra-bloc exports to world exports (in 2021)	7.917%	11.486%	20.644%

Source: Based on the data collected from www.trademap.org.

to 39 million USD of which India contributed 30.7 million USD.⁷ Hence, India contributes around 78.7% (in 2021) of intra-SAPTA exports (a significant share). India holds a predominant position in SAARC and is highly committed to the bloc (Jain, 2005), which might be because India is one the largest and emerging market of Asia. Moreover, the bloc's contribution to world exports is too insignificant (only 7%) as the bloc is highly exposed to political and cross-border disturbances (Gauchan & Sarin, 2018).

The study also talks about a plurilateral trade agreement, APTA negotiated between a few countries of South, Central and East Asian regions. APTA also

known as the Bangkok agreement is one of most effectively operational and oldest PSA (Manocha, 2018) negotiated in June 1976. The agreement had Bangladesh, Korea, India, Sri Lanka and Laos as its original signatory member, and China joined APTA in 2002. APTA has drawn the best of three major markets in Asia, namely, India; Republic of Korea; and China. The bloc is working well towards developing a trade and investment-supportive environment. Table 6 reflects that intra-AFTA exports have grown 10 times in 2021 since 2002 and APTA exports to the world have been 10.2% in 2021.

Table 6 also provides a comparative tabulation of intra-SAARC, intra-ASEAN and intra-APTA exports since 2002. The trends of intra-bloc(s) indicate that intra-bloc export growth rate of APTA and ASEAN is much more than the intra-SAARC export growth. Table 6 also summarises the percentage of intra-bloc exports as a percentage of world exports for each bloc under study. The trends show a significant upsurge in the share of ASEAN followed by APTA and SAARC. However, Asian economies still need to strengthen the intra-bloc operations to generate better trends of exports in the years to come. In the nutshell, we can state that S, E and SE Asian economies are fast promoting trade via negotiating meaningful and significant RTAs (both bilateral and plurilateral) but the magnitude and impact of each RTA for exports is varied. ASEAN is fast expanding and growing RTA with intra-ASEAN export as 20% of total world exports (in 2021), whereas SAARC exports to world export is just 7%.

Trade and Investment in South, Southeast and East Asia

This section of the article talks about the trends of trade and investment in S, SE and E Asia. Trends of RTA along with the changing dynamics of trade and investment will help us to understand changing markets and economic structures of Asian economies. This section tabulates the trends of trade (export and import) and investment (inward and outward stock) for the region under study. We also try to provide a pictorial trend of trade and RTA, and investment and RTA for S, SE and E Asian regions.

Trade Trends in South, Southeast and East Asia

This subsection captures the trends of exports and imports in the S, SE and E Asian regions. Starting with the exports, Table 7 depicts that Asian share in world export has grown from 27.5% (in 1991) to 43% (in 2021), and S, SE and E Asian regions have been consistently contributing around 80% of total Asian exports since 1991. Hence, Asian countries (especially S, SE and E Asian countries) are significantly contributing to the world exports and S, SE and E Asian economies have the lion's share of Asian exports. Trends also depict that East Asian exports to world exports have also grown from 18.1% (in 1991) to 26.4% (in 2021). Similarly, an upsurge in Southeast Asian exports to world exports from 4.7% (in 1991) to 7.7% (in 2021) has been seen. However, the share of South Asian exports to world exports has been insignificant and, hence, a growth of only 1.2% since 1991 (in aggregate 2.5% in 2021) is registered.

Similar trends for imports were also depicted. Table 7 depicts that Asian imports as a percentage of world imports have also grown to 39.1% (in 2021) as compared to 25% (in 1991). Like exports, imports of S, SE and E Asian regions have been around 85% of Asian imports since 1991. A remarkable growth in East Asian imports to world imports is registered, and a rise from 15.2% (in 1991) to 23% (in 2021) is seen. However, the share of world imports of Southeast Asia and South Asia in 2021 has been 7.2% and 3.6% (2021) respectively. The trends of imports and exports for the said region of Asia have been more or less the same.

Hence, we can summarise the reason for growth of exports and imports in S, SE and E Asian regions as follows:

1. First, the region has a number of countries (India, Pakistan, Vietnam, China, Japan, Korea and others) with huge coastal borders and, hence, can take geographical advantages of sea routes. Moreover, these economies have sincerely worked towards developing sea routes for trade since last 2–3 decades (Chaudhury, 2022; Idris & Ramli, 2018) and such efforts have led to an increase in commercial shopping (and connectivity) via seaports.
2. Second, the region comprises emerging and developing economies such as India, China, Korea, Singapore, Malaysia and others that have significantly contributed towards institutional and global changes to boost trade (Shimada, 2019).
3. Third, the economies in the said region are becoming significant production centres (Yang, 2016) with strong global value chains and global production networks.
4. Moreover, emerging economies are working towards macro-level stability; trade openness and tariff reduction; and various trade-supportive reforms (Dorosh, 2002).
5. Furthermore, a number of Asian economies are still developing and, hence, the demand (and import) of consumable and intermediary products is high. Growth of IT has further boosted retail outlets and ultimate consumer demand in Southeast Asia (Ahmed, 2021).
6. Asian region is trying to boost infrastructure and, hence, import goods to support both the quality and quantity of infrastructure. Karymshakov and Sulaimanova (2021) suggested that quality and quantity of infrastructure have strengthened trade in Asian economies.
7. Asian continent is the largest in terms of GDP and population growth and, hence, significant demand (imports) for varied goods and services can be seen.
8. Last, Asian economies are working towards rapid industrialisation, therefore, to feed the increasing industrial needs, the region is expected to import more.

The region is opening gates for trade with intra-Asian economies as well as the rest of the world and, hence, boosting trade-related infrastructure, trade-supportive policies and tariff reduction measures via negotiating significant RTAs both intra-regional and extra-regional to fetch trade for the region. A pictorial representation of RTA and trade trends of S, SE and E Asian are depicted in Figure 2.

Table 7. Export and Import Trends of South, Southeast and East Asian Regions (1991–2021).

Exports in (US Dollars at Current Prices in Millions)														
Year	1991	1995	2000	2001	2005	2010	2011	2015	2016	2017	2018	2019	2020	2021
Economy														
World	3516771.7	5176362.2	6452629.9	6195303.9	10502734.9	15297248.8	18335025.4	16554294.6	16035882.5	17740888.4	19549334.9	19014314.5	17648467.5	22328176.6
Asia	967020.2	1560988.6	2067262.9	1882035.3	3590206.9	5953663.5	7207188.5	6864004.5	6561804.5	7291151.7	8051121.4	7814475.4	7449204.4	9595073.6
Eastern Asia	637694.1	1007301.3	1258589.7	1140645.6	2136742.6	3495528.4	4050001.4	4231135.6	4044245.3	4411859.9	4742835.2	4622248.2	4648754.3	5892860.4
South-eastern Asia	165586.5	321409.3	430202.5	387045.7	656581.8	1050067.4	1239482.7	1167101.5	1144035.8	1316371.8	1446018.4	1423332.5	1385504.7	1720642.0
Southern Asia	47176.8	64979.7	93118.5	90205.0	189229.8	378956.5	497279.3	405321.6	405097.5	463142.0	505373.2	467530.6	391528.1	555902.2
Developing economies:	568436.3	973768.5	1384294.7	1299052.3	2668076.6	4659092.6	5760994.4	5648263.2	5360754.8	5957978.1	6646167.0	6508172.0	6245235.1	8134482.8
Asia														
APTA (Asia-Pacific Trade Agreement)	165627.0	312551.1	476535.6	471634.5	1163249.9	2302931.5	2798182.6	3119423.7	2911965.2	3194566.9	3479894.3	3430732.2	3436204.0	4477323.6
ASEAN (Association of Southeast Asian Nations)	165586.5	321409.3	430202.5	387045.7	656573.7	1050051.0	1239469.5	1167083.5	1144015.8	1316348.4	1445973.2	1423178.8	1385241.2	1720026.5
SAARC (South Asian Association for Regional Cooperation)	28515.8	46619.7	64379.5	64516.0	132977.8	277640.5	365279.3	335046.6	332194.5	370378.0	401951.2	401812.6	344611.7	484256.6
Contribution to world export (in %)														
Asia	27.5	30.2	32.0	30.4	34.2	38.9	39.3	41.5	40.9	41.1	41.2	41.1	42.2	43.0
Eastern Asia	18.1	19.5	19.5	18.4	20.3	22.9	22.1	25.6	25.2	24.9	24.3	24.3	26.3	26.4

(Table 7 continued)

(Table 7 continued)

Exports in (US Dollars at Current Prices in Millions)														
Year	1991	1995	2000	2001	2005	2010	2011	2015	2016	2017	2018	2019	2020	2021
South-eastern Asia	4.7	6.2	6.7	6.2	6.3	6.9	6.8	7.1	7.1	7.4	7.4	7.5	7.9	7.7
Southern Asia	1.3	1.3	1.4	1.5	1.8	2.5	2.7	2.4	2.5	2.6	2.6	2.5	2.2	2.5
Developing economies:	16.2	18.8	21.5	21.0	25.4	30.5	31.4	34.1	33.4	33.6	34.0	34.2	35.4	36.4
Asia														
% of S, SE and E Asia share of Asian exports	87.9	89.3	86.2	86.0	83.1	82.7	80.3	84.6	85.2	84.9	83.1	83.3	86.3	85.1
Imports in (US dollars at current prices in millions)														
World	3637928.7	5234912.7	6654712.0	6412373.9	10778216.9	15425309.5	18445520.5	16737109.9	16206494.4	17976824.3	19818814.0	19337559.5	17878636.4	22586617.7
Asia	910838.1	1503446.2	1823858.1	1709841.2	3218392.2	5454222.8	6699743.0	6252052.4	5946089.1	6754101.2	7508593.4	7315590.3	6819486.6	8833587.1
Eastern Asia	554223.8	906550.3	1124624.6	1049000.9	1928248.4	3220561.2	3934465.0	3579393.6	3395073.8	3860115.0	4352044.5	4187955.6	4044538.9	5193719.1
South-eastern Asia	183991.1	355311.1	380640.5	346992.0	602839.6	953358.4	1154982.9	1098393.1	1079286.4	1259448.0	1425194.5	1388933.7	1269323.5	1621505.7
Southern Asia	64703.9	74029.0	94761.9	96036.0	236876.1	507008.7	641514.5	561549.6	534126.9	651785.2	730749.0	680235.0	545786.6	820749.1
Developing economies:	573656.1	1002863.6	1246181.1	1184205.2	2394146.3	4273742.7	5244119.6	5105370.9	4866355.6	5534399.3	6148305.5	6014699.6	5647133.7	7357363.0
Asia														
APTA (Asia-Pacific Trade Agreement)	172760.6	314788.2	453341.9	451182.3	1088849.9	2218362.9	2797844.5	2580651.1	2428451.4	2856016.0	3280332.0	3159218.3	2986327.1	3990845.3
ASEAN (Association of Southeast Asian Nations)	183991.1	355311.1	380640.5	346992.0	602730.5	953112.0	1154664.1	1097815.1	1078739.7	1258893.8	1424674.5	1388343.1	1268698.1	1620633.1

SAARC (South Asian Association for Regional Cooperation)	36776.9	60147.0	80863.9	79327.0	196835.1	441604.7	579754.5	516612.6	491046.9	602286.2	681396.0	638407.0	507029.1	771770.7
Contribution to world import (in %)														
Asia	25.0	28.7	27.4	26.7	29.9	35.4	36.3	37.4	36.7	37.6	37.9	37.8	38.1	39.1
Eastern Asia	15.2	17.3	16.9	16.4	17.9	20.9	21.3	21.4	20.9	21.5	22.0	21.7	22.6	23.0
South- eastern Asia	5.1	6.8	5.7	5.4	5.6	6.2	6.3	6.6	6.7	7.0	7.2	7.2	7.1	7.2
Southern Asia	1.8	1.4	1.4	1.5	2.2	3.3	3.5	3.4	3.3	3.6	3.7	3.5	3.1	3.6
Developing economies: Asia	15.8	19.2	18.7	18.5	22.2	27.7	28.4	30.5	30.0	30.8	31.0	31.1	31.6	32.6
% of S, SE and E Asia share of Asian imports	88.15	88.86	87.73	87.26	86.00	85.82	85.54	83.80	84.23	85.45	86.67	85.53	85.93	86.44

Source: Based on the data collected from the UNCTAD database.

A rising trend for both RTAs and trade (export and import) for S, SE and E Asian regions can be seen. However, the rise in the number of RTAs negotiated in the region is steady during the last 30 years (starting from 1991) but for trade small variations are depicted in 2008–2009, 2016–2017 and 2019–2020, which might be due to global financial crisis 2007–2008 and Covid-19. Nevertheless, a long-term perspective seems to be upward sloping both for trade and RTAs negotiated in the region under the study.

Investment Trends in South, Southeast and East Asia

The study not only tabulates trade patterns for S, SE and E Asian economies but also captures the movements of investment in the region. ‘Asia continues to be the world’s top recipient region of foreign direct investment (FDI), accounting for nearly 30 per cent of global FDI inflows’, UNCTAD’s World Investment Report 2014. This indicates that Asia is emerging as one of the most prominent destinations for investment inflows. To study the direction, nature and pattern of investment flows in S, SE and E Asia, we have tabulated (see Table 8) FDI inward flows and FDI outward flows in the region.

Investment (FDI) refers to acquisition of business ventures by an entity in a foreign land. Asian economies such as China, Japan, Hong Kong, Korea, Singapore, India, Thailand and others are emerging as the most preferred destination for FDI inward flows. Table 8 depicts that in 2021, Asian economies were able to fetch 43.6% of world FDI inflows and S, SE and E Asian regions contributed 86.6% of total Asian FDI inflows (in 2021). Trends of the East Asian region depict that the region was able to fetch FDI inflows of 23.4% of world FDI inflows in 2021. A tremendous increase in FDI inflows for East Asia has been registered since 1991 (in 1991, East Asia received only 6.12% of world’s FDI inflows). Similarly, Southeast Asia accounted for growth in FDI inflows as 11.08% of world FDI inflows (in 2021) as compared to 8.86% inflows in 1991. FDI inflows for South Asia are depicting an upward trend but the growth is still slow and limited, South Asian economies received FDI inflows of 0.29% in 1991 and 3.3% of world FDI in 2021. South Asian region still needs to work towards inviting sizeable FDI flows in the region.

Talking about FDI outflows, prior to 1991 FDI outflows were prerogative of developed countries. As evident from Table 8, only 3.28% of FDI outflows went from developing Asian economies in 1991. However, the liberalisation wave promoted FDI outflows from developing economies too and, in 2021, developing Asian economies registered FDI outflows as 23.08% of world FDI outflows. Talking about the trends of East Asian economies, a significant rise from 19.62% (in 1991) to 26.47% of world FDI outflows (in 2021) is seen. However, the FDI outflows for Southeast and South Asia are still limited, which might be because the regions largely constitute of emerging economies where the liberalisation measures are limited and/or the industrial development in the region is not equipped enough to venture into a foreign land. For South Asian economies, FDI flows are even less than 1% of the world FDI outflows in 2021.

To summarise, we can say that like trade flows, investment flows in an economy are indicators of liberalisation and the willingness of economies to expand (and

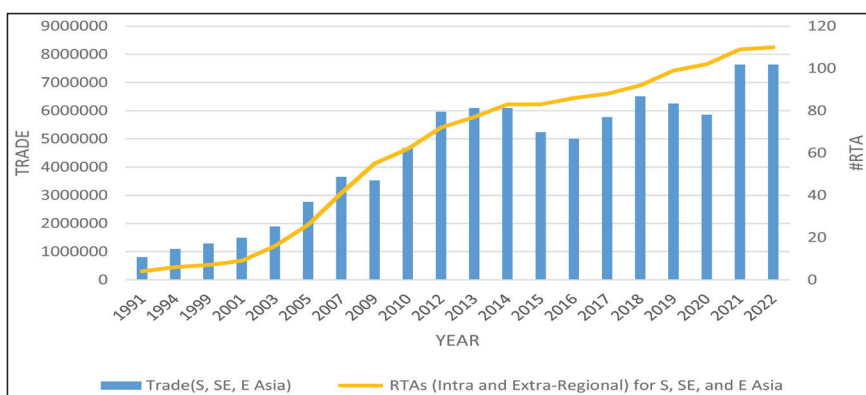


Figure 2. Trends of Trade (X+M) and RTAs for S, SE and E Asia.

Source: Based on the data collected from the WTO database and the UNCTAD database.

diversify). The reasons for growth of FDI inflows and outflows in S, SE and E Asia can be stated as follows:

1. Asian economies are looking for better and cheaper sources of production and distribution in order to offer competitive goods and services. Moreover, for the sustainable development of Asian economies, FDI flows are vital (Asian Development Bank, 2008).
2. FDI flows facilitate better and alternative technology transfers to emerging and developing economies (Pant & Mondal, 2010). With new technology, FDI also supports skill enhancement and labour training norms.
3. An upsurge in FDI inflows in Asian economies is also supporting an increase in the employment level (Mahnaz et al., 2022), infrastructure development (Kapadia & Agrawal, 2011) and better flow of finance.
4. Rise in FDI inflows in the said region can be attributed to the presence of plentiful natural resources, making the Asian region one of the most sought-after destinations for FDI inflows.
5. Asian economies are becoming more competitive and have an urge to accelerate growth; therefore, they are looking for collaborations, expansion and mergers beyond the boundaries. As per the World Investment Report, 2013, India; China; Japan; and Korea are the promising investor economies in the Asian region.

However, to boost FDI inflows and outflows Asian (especially Southeast and South Asian) economies still need to revisit and revamp FDI policies and strategies. FDI policies should be more towards fit-to-purpose and green technology in order to witness a sustainable flow of FDI in years to come (ESCAP-75, 2020).

The study also tries to present (see Figure 3) the trends of RTAs and FDI flows (inward and outward) in Figure 3. Like trade trends, FDI trends were also upward moving since 1991. However, a reduction is registered during 2019–2020, which might be due to the Covid-19 pandemic.

Table 8. FDI Inward and Outward Trends of South, Southeast and East Asian Regions (1991–2021).

FDI Inward Flows														
Year	1991	1995	2000	2001	2005	2010	2011	2015	2016	2017	2018	2019	2020	2021
World	153959.09	345142.74	1356685.07	773130.51	953219.65	1390942.27	1610398.18	2063638.28	2045423.56	1632638.52	1448276.18	1480626.05	963138.54	1582309.76
Asia	25690.61	84781.62	159175.24	134517.69	237232.32	437800.31	447947.09	549266.63	521598.98	545543.09	540557.74	552384.12	562643.96	690070.19
Eastern Asia	9421.88	47833.45	120107.02	93014.33	125932.71	200548.68	232023.36	320583.53	290128.05	280659.80	276479.42	255728.78	304193.80	370389.74
South-eastern Asia	13639.28	28632.37	21751.29	22161.42	42739.08	112880.34	87024.91	119048.91	113321.65	154449.88	148776.04	174976.49	122109.72	175313.94
Asia														
Southern Asia	446.94	2816.35	4866.28	6747.14	14182.11	34862.51	44331.56	51227.32	54281.01	51639.92	52262.45	59085.78	70957.31	52416.83
Developing economies:	22901.58	80676.46	132385.65	119982.07	215995.09	422569.82	431279.03	530810.50	478147.59	501381.78	496897.81	511631.77	518893.11	618983.38
Asia														
APTA (Asia-Pacific Trade Agreement)	5982.95	42420.83	56653.56	59400.79	95003.55	155009.62	176912.66	187832.33	190304.53	200836.65	201402.90	208233.91	227863.62	249216.51
ASEAN (Association of Southeast Asian Nations)	13639.28	28632.37	21751.29	22161.42	42738.18	112851.82	86977.83	119005.92	113316.17	154443.17	148728.12	174901.91	122037.34	175228.62
SAARC (South Asian Association for Regional Cooperation)	424.35	2807.58	4672.71	6339.02	11292.92	31213.54	40054.84	49177.32	50909.01	46620.92	49889.45	57577.78	69615.31	50991.83
Contribution to world FDI inflows (in %)														
Asia	16.69	24.56	11.73	17.40	24.89	31.48	27.82	26.61	25.50	33.41	37.32	37.31	58.42	43.61
Eastern Asia	6.12	13.86	8.85	12.03	13.21	14.42	14.41	15.53	14.18	17.19	19.09	17.27	31.58	23.41

South-eastern Asia	8.86	8.30	1.60	2.87	4.48	8.12	5.40	5.77	5.54	9.46	10.27	11.82	12.68	11.08
Southern Asia	0.29	0.82	0.36	0.87	1.49	2.51	2.75	2.48	2.65	3.16	3.61	3.99	7.37	3.31
Developing economies: Asia	14.88	23.37	9.76	15.52	22.66	30.38	26.78	25.72	23.38	30.71	34.31	34.56	53.88	39.12
% of S, SE, and E Asia share of total Asian FDI inflows	91.50	93.51	92.18	90.64	77.08	79.55	81.12	89.37	87.76	89.22	88.34	88.67	88.38	86.68
FDI outward flows														
World	198856.81	361243.83	1162491.56	681550.39	837155.67	1392058.08	1628481.62	1722753.80	1596715.94	1610113.26	941292.85	1123894.02	780479.74	1707593.52
Asia	40102.50	68638.50	113903.65	94878.80	139222.41	364117.75	443715.30	528481.57	567023.59	606416.70	549942.25	612768.61	515255.21	611433.08
Eastern Asia	39022.50	56481.83	98095.04	71507.71	99465.96	250738.45	321222.63	391273.94	458636.67	456098.99	426676.98	470752.09	398178.88	451991.21
South-eastern Asia	923.97	12079.05	8996.10	20766.33	20056.11	63204.81	65334.16	73476.65	49565.41	88548.29	57546.08	79502.10	62386.89	75837.83
Southern Asia	7.89	128.55	540.44	1499.04	3486.85	16290.57	12823.01	7817.76	5519.82	11493.31	11630.42	13275.22	11205.96	15985.90
Developing economies: Asia	6518.003508	41565.51173	74168.80163	53114.86156	82162.5312	271633.8481	299067.7103	357577.455	366618.8367	400135.118	360653.129	336212.8351	378381.8583	394118.2649
APTA (Asia-Pacific Trade Agreement)	2498.26	5998.97	6286.23	11047.26	23620.17	113134.02	116925.86	177076.26	231418.28	203770.31	192832.77	185520.28	199703.97	221754.41

(Table 8 continued)

(Table 8 continued)

FDI Inward Flows														
Year	1991	1995	2000	2001	2005	2010	2011	2015	2016	2017	2018	2019	2020	2021
ASEAN (Association of Southeast Asian Nations)	923.97	12079.05	8996.10	20766.33	20056.11	63178.81	65367.16	73463.98	49552.74	88548.29	57546.08	79502.10	61693.02	75837.83
SAARC (South Asian Association for Regional Cooperation)	-10.08	126.30	529.45	1449.04	3072.29	16051.61	12565.38	7698.07	5415.70	11417.56	11555.82	13190.40	11127.57	15904.29
Contribution to world FDI inflows (in %)														
Asia	20.17	19.00	9.80	13.92	16.63	26.16	27.25	30.68	35.51	37.66	58.42	54.52	66.02	35.81
Eastern Asia	19.62	15.64	8.44	10.49	11.88	18.01	19.73	22.71	28.72	28.33	45.33	41.89	51.02	26.47
South- eastern Asia	0.46	3.34	0.77	3.05	2.40	4.54	4.01	4.27	3.10	5.50	6.11	7.07	7.99	4.44
Southern Asia	0.00	0.04	0.05	0.22	0.42	1.17	0.79	0.45	0.35	0.71	1.24	1.18	1.44	0.94
Developing economies: Asia	3.28	11.51	6.38	7.79	9.81	19.51	18.36	20.76	22.96	24.85	38.31	29.91	48.48	23.08
% of S, SE, and E Asia share of total Asian FDI inflows	99.63	100.07	94.49	98.83	88.35	90.69	90.01	89.42	90.60	91.71	90.16	91.96	91.56	88.94

Source: Based on the data collected from the FDI UNCTAD database.

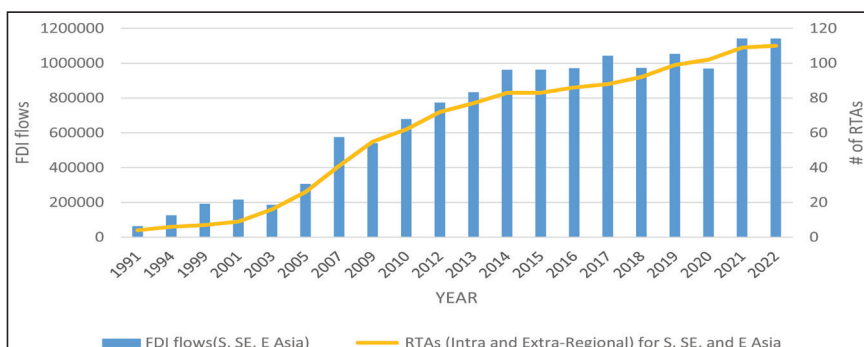


Figure 3. Trends of RTAs and FDI Flows in S, SE and E Asian Economies.

Source: Based on the data collected from the WTO database and the FDI UNCTAD database.

The trends for RTAs, trade and investment depict that Asian economies are sincerely working towards liberalisation measures and are taking steps towards making the Asian subcontinent a major hub of global trade and investment. Also, countries in Asia are working towards promoting strong global value chains and global production networks by promoting trade and investment-associated norms and policies.

Conclusion

The regional trends of S, SE and E Asian RTAs depicted an upsurge in the number and intricacy. The present study was an attempt to examine the changing dynamics of regional integrations by examining the trends of three major RTAs of the said region, namely, ASEAN; APTA; and SAARC/SAFTA. The salient features of the trends can be stated as follows:

- Asian region is coming up as a vital hub of RTAs, having the second largest regional integration platform in number followed by the European region indicating an intent to diversify, enhance and intensify trade-in-goods, trade-in-services, investment environment, infrastructure, global and regional value chains, and policy frameworks towards the global market.
- In aggregate (intra-regional and extra-regional) RTAs negotiated in S, SE and E Asia as of 30th September 2022 account for more than 100 in number.
- East and Southeast Asia are performing well with regards to the formation and expansion of regional integration. Even, the South Asian region is facilitating the formation of RTAs, but the growth is relatively slow. India has the major share of RTAs in the region. The results indicate that Southeast Asian economies are working towards deepening and expanding of existing and potential regional cooperation, and hence significantly supporting regional and global value chains; technology supports; redefining business service; closer and

efficient value chains; better production processes; investment flows from diversified investing host economies; strong digital trade rules; and free flow of trade with negligible or no trade barriers (ARIC, 2023). However, South Asian economies need to reduce structural and infrastructural limitations; cross-border differences; restrictive policies; and a trade protectionist approach. As per IMF 2019, India has emerged as one of the fast-growing large economies but other economies in the bunch of South Asia still need to invest in people; trade and investment liberalisation mechanisms; and progressive growth avenues in order to accelerate growth in the South Asian region.

- The study briefly discusses the trend of three major plurilateral RTAs (ASEAN, SAARC and APTA) in the region in terms of the intra-bloc export value (though RCEP is an extended bloc of ASEAN and five emerging economies are also gaining popularity in the said region, RCEP has been currently negotiated [in 2022]; therefore, its trends were not captured).
- Trends for the ASEAN trading bloc indicated that the intra-bloc export value has increased marginally by 4 times in 2021 since 2002 but the exports of ASEAN to world export suggested 20.6% share in 2021. Trends for APTA suggested that the APTA intra-bloc export values have shown an upsurge of 10 times in 2021 since 2002 and APTA economies have contributed around 11.4% to the world exports in 2021.
- Intra-SAARC exports have grown by 11 times in 2021 since 2002 but SAARC's share of the world export is much less as compared to ASEAN and APTA, which might be due to political disturbances in the South Asian region.

While summarising the trends of trade and investment in the S, SE and E Asian region, we were able to see an upsurge in the regional flows both for trade and investment and depicting compatibility with a significant rise in RTAs in the region:

- The gap between the imports and exports in the Asian region is reducing and Asian exports were registered as 43% of the world exports, whereas Asian imports were found to be 39.1% of the world imports in 2021. The results indicate Asia is significantly contributing to the world trade both in terms of exports as well as imports.
- S, SE and E Asian economies have significant advantages of institutional adaptation, labour-intensive workforce, abundance of natural sources of raw material, adaptive policy structure and intent to diversify and support world trade. Such an environment has extensively supported exports of emerging economies in the region.
- The credit of the rise in imports goes to the increasing industrial needs and consumable demands (intermediate and final products) of highly populated and diversified economies in the region.
- As per ESCAP (2021), Asia has emerged as the top most destination for FDI. Large emerging economies such as China; Japan; Hong Kong; Singapore; India; Thailand; Korea; and others seem to be preferred destinations in Asia. The results for FDI flow trends indicate that Asian economies were able to fetch 43.6% of world FDI inflows and S, SE and

E Asia stand as significant destinations of Asia with 86.6% inflows of total Asian FDI inflows in 2021. Trends for East and Southeast Asia (in terms of investment flows) were encouraging, whereas the trends for the South Asian region suggested that the region is stimulating investment flows since 1991 but the growth is relatively slow. South Asian region still needs to work towards inviting sizeable FDI flows in the region.

- S, SE and E Asian regions have an abundance of natural resources, cheaper techniques of productions, labour-intensive markets, intent to boost R&D and an increasing urge to collaborate and expand (mergers/joint ventures/acquisitions), which in turn is stimulating the growth of inward and outward investment in the region. However, the trends indicate that East Asian economies are performing quite well both in terms of inward and outward flows of investment. Southeast Asian economies are also performing reasonably well in both the domains of FDI, but South Asian economies still need to come up with more investment-supportive policies and structures in order to enhance the inward and outward flows of investment.

Since 1991, not only an upsurge in the number (and depth) of regional economic integration can be seen but also a consistent rise in the investment flows, trade flows and production avenues can be registered. Emerging economies in the said region such as China, India, Korea, Singapore, Thailand and others seem to be major contributors. Though the trends for Southeast and East Asia for RTAs, trade and investments are found to be encouraging, trends for South Asia suggest that except India all other South Asian economies need to have better liberalisation policies and strong economic reforms in order to attract more quality and quantity of trade and investment flow. Further, the trends in the region indicate that economies in the said region are consistently working towards supporting global and regional supply chains, global production (and distribution) networks, strengthening digital trade, better investment ventures and adapting to changing dynamics of trade and investment on the global platform. However, as per the Asian economic integration report 2023 (ARIC, 2023), 'Asian economies are able to register strong growth but headwinds are increasing'. To curtail inflation, Asian economies are tightening monetary policies but such measures are exerting pressure on external demand and, hence, exports. Further, almost all Asian economies are coming up with trade policies that are compatible with intra-regional and extra-regional production cycles. Hence, the trade structures for Asia are largely associated with exports and imports of intermediate goods but less with consumer goods.

Conclusion

Using the trends, we can state that S, SE and E Asian economies are significantly contributing to the world trade and investment market. However, the economies in the said region should work on a few aspects to further strengthen the trade and investment flows (both intra-regional as well as extra-regional). The regional integration negotiated in the region should be deepened to further support regional value chains and global value chains. Further, the upcoming RTAs should cater to

the needs of digital trade flows and should be drafted towards making trade (and investment) flows resilient towards global shocks. Talking about the trade flows, trade policies should not only be compatible with the production cycle (catering to intermediate goods) but should also synchronise with the consumer needs and demands to further boost trade flows in the said region. In order to boost FDI flows, a number of Asian economies are providing corporate income tax incentives in terms of tax holidays, tax credits, investment allowances, etc. However, global (or regional) tax rules (and norms) would further strengthen cross-border investment. Further, economies in the region should focus on both aggregate and key sector-oriented trade and investment especially to boost eco-friendly products, green technology, energy-efficient flows and sustainable production (and distribution) networks.

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Assessing Quality in Ready-Mix Concrete Production: A Case Study of B. L. Kashyap and Sons Ltd

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Abstract

This case study focuses on B. L. Kashyap and Sons Ltd (BLK), a renowned construction company in India, which encountered quality issues in the manufacturing process of ready-mix concrete. A comprehensive analysis utilising quality tools was undertaken to identify the underlying causes of these issues. The study revealed that defects in test and inspection, along with high temperatures during the process, were significant concerns. To address these challenges, the study explores strategies and structural changes that actively involve suppliers, stakeholders, managers, work teams and customers in improving the production process. Emphasising the importance of clearly defining responsibilities, duties and fostering continuous process improvement, this case study provides valuable insights for organisations seeking to enhance quality control and cultivate a culture of continuous improvement.

Keywords

Case study research, quality, quality management, total quality management

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Introduction

In November 2022, Vinod Kashyap, Chairman, and Vineet Kashyap, Managing Director, of B. L. Kashyap and Sons Ltd (BLK), found themselves grappling with quality issues in the manufacturing process of ready-mix concrete (RMC). As leaders with a shared vision and unwavering determination, the Kashyap brothers successfully nurtured their business, establishing BLK as one of India's respected construction companies. With over three decades of experience in business development, they had spearheaded the marketing, finance and operations strategies of the organisation, resulting in remarkable growth and recognition in the field of construction.

The cornerstone of BLK's success lies in its people, who are considered the core strength of the organisation. BLK firmly believes in the collective potential of its team to foster innovation and deliver projects with exceptional efficiency. With a strong emphasis on quality standards and a steadfast commitment to environmental, health and safety practices, BLK strives to create an environment where colleagues are empowered to explore new technologies and processes. By embracing these advancements, they aim to provide comprehensive solutions that exceed client expectations.

BLK is currently experiencing a period of remarkable growth, with an impressive average annual growth rate ranging from 15% to 20%. Equipped with the necessary resources and expertise, they have the capability to successfully execute high-quality projects in diverse segments of the urban landscape and infrastructure development. Their overarching goal is to generate substantial value for their shareholders and all other stakeholders associated with the company. By fostering a culture of continuous improvement and upholding its unwavering commitment to excellence, the company remains dedicated to achieving remarkable outcomes for its clients while ensuring the utmost satisfaction of its valued colleagues.

Background of the Company

Founded in 1989, BLK swiftly emerged as a prominent Construction, Infrastructure and Civil Engineering company with a nationwide presence. The company went public in 2006. Today, BLK is synonymous with delivering value in various aspects of engineering, construction, design, infrastructure, quality, safety, speed and timely project delivery. The company's vision is deeply rooted in work ethics aligned with its overarching goals, aimed at establishing a distinct position in the construction industry, characterised by uncompromising value. Over the years, BLK has created iconic structures across the nation and has been trusted by prestigious clients, such as The Escorts Group, Goetz India Ltd, Birla Group, Carraro India, Oberoi Hotels, Taj Group of Hotels, Shangri-La, Hilton, Four Seasons, IBIS Hotel, Novotel, JW Marriott, Park Hyatt, ITC, The Embassy Group, among others. Through their projects, BLK contributes to the long-term development and economic growth of the country.

Competitors of B. L. Kashyap: A Comparative Analysis of Quality Perspectives

In the competitive landscape of the construction industry, BLK faces several formidable rivals, including Larsen & Toubro Ltd (L&T), GMR Airports Infrastructure Ltd, Shapoorji Pallonji Engineering and Construction, ITD Cementation India Ltd, Sobha Ltd and Ahluwalia Contracts (India) Ltd. Each competitor has adopted distinct quality tools and approaches tailored to their specific needs and requirements. Taking one of their key competitors, L&T, as an example, their quality perspective is characterised by a pragmatic and thoughtful approach.

L&T's commitment to performance excellence is underpinned by a shared objective and a culture of learning from past experiences. They have embraced various approaches such as risk-based thinking in their business process decisions, customer focus, the Plan-Do-Check-Act (PDCA) cycle, and a 'right the first time' mindset during project execution (L&T Construction, 2022). These initiatives have led them to prioritise continuous training, embrace new technologies and digitalisation, and provide cost-effective solutions without compromising on quality. L&T's quality practices encompass comprehensive systems, including quality management systems, project quality plans, standard operation procedures, method statements, quality assurance plans, inspection test plans and inspection checklists (L&T Construction, 2022). These rigorous control measures are in place to ensure that products and projects consistently meet or surpass customer expectations. Furthermore, L&T implements stringent evaluation, approval, inspection and monitoring protocols for outsourced processes and products, thereby guaranteeing compliance with established standards and specifications.

Shapoorji Pallonji, another notable competitor, places a strong emphasis on meeting customer expectations through a well-designed and established service delivery system. They demonstrate a commitment to continuous technological advancement and value analysis, striving to enhance the effectiveness of their quality system. Shapoorji Pallonji has earned recognition as one of the most quality-conscious construction companies in the industry (Shapoorji.in, 2018). Noteworthy reflections of their commitment include being the first construction company to achieve ISO 9001 Certification, employing knowledge management as a strategic tool, boasting a 147-year legacy and being pioneers in venturing into the Middle East with projects like the Oman Palace in 1970 (Shapoorji.in, 2018).

In line with their rivals, BLK also emphasises the importance of integrated management systems to drive continual improvement in overall quality, environmental and occupational health and safety (OH&S) performance. However, what sets BLK apart from its competitors are three ISO standards they adhere to, which contribute to their unique approach to quality management. These standards serve as a testament to B. L. Kashyap's unwavering commitment to delivering superior results and maintaining a competitive edge in the market.

Quality at BLK

Quality lies at the heart of BLK's operational ethos, serving as a driving force in their work processes. They prioritise the utilisation of cutting-edge equipment, highly skilled engineers, proficient workmen, top-tier materials and quality tools to ensure superior and consistent outcomes across all their projects. To further guarantee excellence, BLK deploys senior site supervisors who oversee every aspect of the processes, while also maintaining elaborate documentation and reporting systems. In-organisation quality audits, scheduled management visits and periodic reviews are conducted to ensure impeccable workmanship, meticulous detailing and timely project completion.

The satisfaction expressed by their clients through glowing testimonials, repeat business engagements and the expanding scope of their operations is a testament to BLK's unwavering commitment to quality and customer satisfaction. BLK follows a comprehensive set of quality policies to establish clear expectations for the organisation and its employees. These policies include aligning the quality management system with the organisation's strategy, adopting risk-based thinking and risk control measures, determining the organisational context for effective implementation of the quality management system, and emphasising efficient processes to achieve planned outcomes. Effective communication with customers, alignment with strategic direction, integration of the quality management system into the organisation's business processes, flexibility in documenting information, ensuring customer satisfaction, credibility and fostering customer retention and loyalty are also key components of BLK's quality policy. BLK has also adopted three essential ISO standards to further enhance its operations. These standards play a pivotal role in solidifying BLK's commitment to quality management, OH&S and environmental sustainability. The first standard, ISO 45001:2018, focuses on establishing a comprehensive framework for ensuring health and safety in the workplace. By adhering to this internationally recognised standard, BLK demonstrates its dedication to creating a safe and secure work environment for its employees, subcontractors and other stakeholders. BLK's commitment to environmental sustainability is reinforced by its adherence to ISO 14001:2015. This standard sets out the requirements for an effective environmental management system, enabling BLK to identify and address environmental impacts associated with its activities. By implementing this standard, BLK aims to minimise their ecological footprint and continually improve their environmental performance. Furthermore, BLK aligns with ISO 9001:2015, an internationally accepted standard that specifies the requirements for a robust quality management system. By complying with ISO 9001, BLK ensures that its processes, procedures and operations are designed to consistently meet or exceed customer expectations. This standard enables BLK to continually enhance customer satisfaction, drive efficiency and pursue excellence in its service delivery.

Through these unwavering commitments and adherence to quality standards, BLK continually reinforces its position as a reputable and trusted player in the construction industry, while consistently meeting and exceeding the expectations of its valued customers.

The Quality Assessment at Company

India's thriving construction market positions it to become the world's third largest in the next 2–3 years, with an estimated average growth rate of 7% annually until 2025 (Rani et al., 2022; Writer, 2023). This favourable outlook, coupled with rapid urbanisation and significant infrastructure investments, presents a compelling opportunity for the company. Recognising these industry trends and their potential to drive growth, Shipra Goel, the General Manager—Projects at BLK, proactively initiated a meeting to evaluate the performance of various departments. To ensure a comprehensive assessment, Vineet and Vinod Kashyap, along with key personnel, convened for this crucial discussion. During the meeting, the Kashyap brothers and the key personnel identified persistent quality issues that were impeding the production process of RMC. Despite previous efforts, these issues had proven difficult to pinpoint and resolve. Even after following all these standards and other parameters, they were still facing quality issues in the production of RMC. Undeterred by the challenges, the Kashyap brothers demonstrated their unwavering commitment to quality and their determination to find a solution. In order to gain fresh perspectives and guidance, they made the decision to engage the services of professionals who could offer valuable insights and recommendations to enhance the company's quality processes and ultimately improve RMC production. Two consulting interns, Ankita and Aviral Jha, were called to analyse the setbacks and provide valuable insights and recommendations.

Unveiling Quality Challenges: Analysing Issues Using TQM Tools

Ankita and Aviral utilised a range of statistical tools from the field of total quality management (TQM) to delve into the core issues faced by the company. Their approach began with the use of flowcharts, which are illustrative diagrams that help depict the typical solutions to problems. These flowcharts aid in understanding and managing processes across various fields (Anderson et al., 2016). Figure 1 presents the flowchart of the process, providing a comprehensive view of how different entities and systems interrelate within the context of the project or situation.

In addition to flowcharts, Ankita and Aviral employed an Ishikawa diagram to identify all potential reasons associated with the poor quality of RMC and to further explore the root causes within BLK. Figure 2 illustrates the Ishikawa diagram, which serves as a valuable tool in visualising the different factors contributing to the problem.

To systematically record the occurrences of problems at the RMC plant, the interns also utilised a check sheet, as shown in Table 1. This check sheet was maintained for a period of 30 days and captured various problem categories. From the table, it is evident that defects in testing and inspection emerged as the most significant occurrence. The check sheet also assessed the issue of high temperature as a potential defect, which hinders the efficiency of the processes. Recognising the significance of temperature as a critical-to-quality factor in RMC production

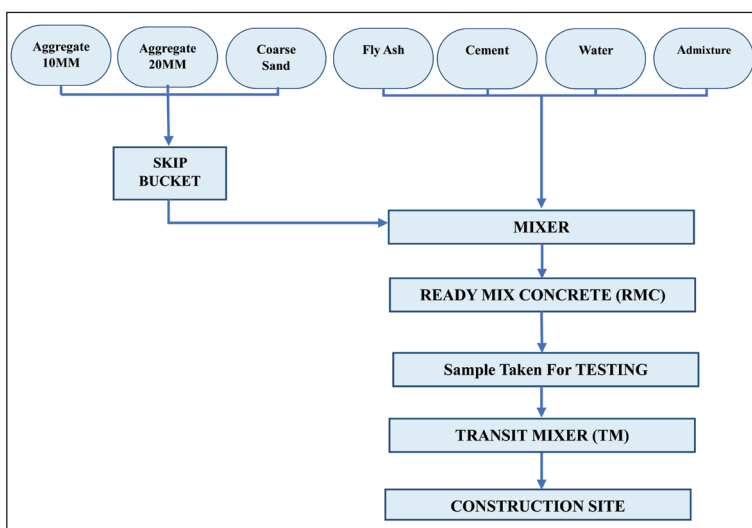


Figure 1. Flowchart of the Process.

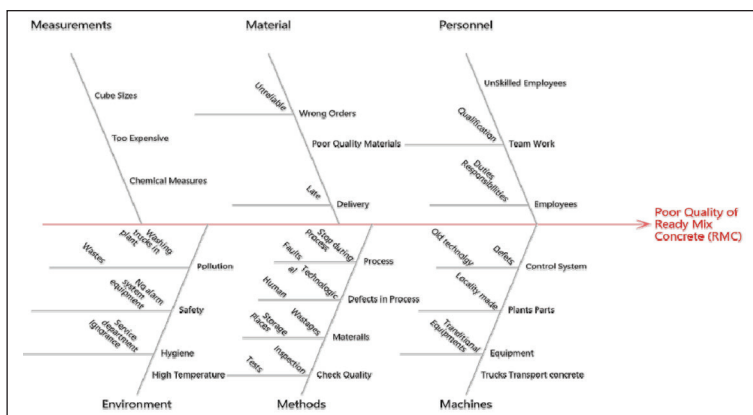


Figure 2. Ishikawa Diagram to Identify Potential Reasons Associated with the Quality of RMC.

at BLK, the quality control team conducted an internal process capability study. After the study, the quality manager of BLK informed the interns that the process capability fell below the two-sigma threshold. Intrigued with the internal assessment of the quality manager of BLK, Ankita and Aviral continued their quest for quality assessment further by employing control charts, a valuable tool for monitoring process variables over time and detecting variations. In order to analyse the variation in temperature, a total of 67 temperature samples were collected, with each subgroup consisting of 4 samples. These samples were taken for both the high-grade (M-90) RMC and low-grade (M-40) RMC. Ankita and Aviral utilised

Table 1. 30-Day Check Sheet Analysis for Comprehensive Process Monitoring.

No.	Defect Type	7 Days	28 Days	Total
1	Late delivery of material			3
2	Additional cost			1
3	Wrong order due to bad communication			2
4	Provided poor quality of materials			3
5	The faults and stop the plant during production			3
6	Waste of material			2
7	Defects in test and inspection			5
8	Conveyor defects			0
9	Lack of awareness of management			1
10	Loss skilled employees			0
11	Services			1
12	High temperature			4
13	Environmental issues due to wastes			3

the X-bar R Chart, a control chart, to gain insights into temperature variations. The X-bar R Chart comprises two components: the X-bar chart and the R (range) chart. The X-bar chart illustrates the average or mean of a process characteristic, enabling the tracking of the central tendency and identification of any shifts or changes in the average value. On the other hand, the R chart measures the range or spread of the process data within each subgroup, providing information about the dispersion or variability within the process. Interestingly, the results of the X-bar R control charts, as shown in Figures 3 and 4, indicated that the process mean was stable, and no subgroups were found to be out of control for both the high-grade and low-grade RMCs.

Through the analysis of check sheet data and the company’s internal quality assessment, they discovered that defects in test and inspection, as well as high temperatures during the process, were major quality issues.

In addition, Ankita and Aviral also conducted interviews as part of an internal survey to gain valuable insights into the quality perspective. The process for selecting target respondents involved several steps to ensure a comprehensive and representative sample. First, the target population for the survey was identified. This included employees from various departments involved in the RMC production process, as well as key stakeholders, such as managers and interdomain supervisors. By including multiple perspectives, the survey aimed to capture a holistic view of the organisation’s quality challenges and opportunities. To select the respondents, a stratified sampling approach was utilised. This involved dividing the target population into distinct groups based on job roles, departments and levels of seniority. Within each stratum, a random sampling technique was employed to ensure equal representation and minimise bias. This approach allowed for a diverse range of respondents, including operators, supervisors, managers and other relevant personnel. To ensure the participation of the selected respondents, Ankita and Aviral implemented a well-structured communication

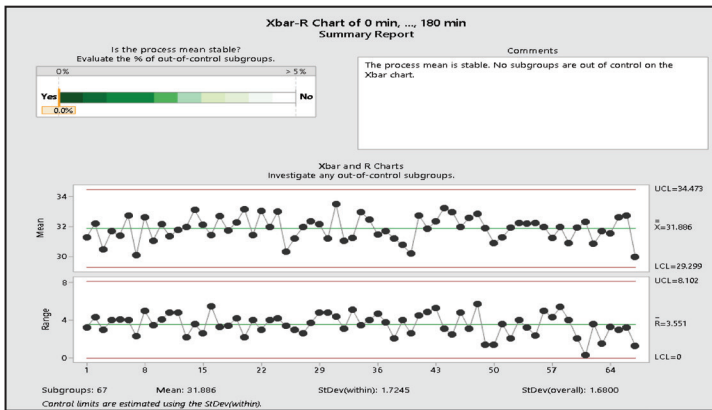


Figure 3. X-Bar R Chart for Temperature Variation Monitoring for Low-Grade (M-40) RMC.

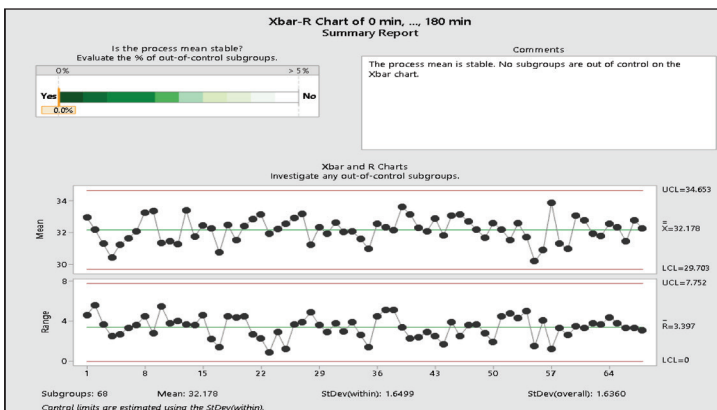


Figure 4. X-Bar R Chart for Temperature Variation Monitoring for High-Grade (M-0) RMC.

plan. They clearly explained the purpose and importance of the interview, highlighting how the collected data would contribute to process improvements and quality enhancement. They assured the respondents of confidentiality and anonymity, fostering an environment of trust and encouraging open and honest feedback. The interview questions themselves were carefully designed to gather the necessary information related to quality perspectives. The questions were aligned and focused on key areas such as quality issues, process efficiency and suggestions for improvement.

Through the interview, they discovered that implementing improvements in the production process necessitated significant changes in the company's structure, involving the active participation of suppliers, stakeholders, managers, work

teams and customers. Clearly defining responsibilities, duties and consistently improving the process were deemed crucial in ensuring product quality and achieving customer satisfaction.

During the analysis, a key finding emerged, shedding light on the primary causes of defects in the quality system. These causes included a lack of management experience in process monitoring, communication issues and a general lack of interest in quality control matters.

Conclusion

The scope of the study conducted by Ankita and Aviral encompassed a comprehensive analysis of quality issues in RMC production at BLK, focusing on identifying root causes, devising targeted measures for process efficiency enhancement, and addressing key factors contributing to defects, with the aim of ensuring product quality and customer satisfaction. Ankita and Aviral employed a range of quality tools, including process flow diagrams, Ishikawa diagrams, check sheets and control charts, to conduct a comprehensive analysis of quality issues in RMC production at BLK. Their objective was not only to identify the root causes but also to devise targeted measures for enhancing process efficiency. The analysis of check sheet data and internal quality assessments revealed significant quality issues related to test and inspection defects, as well as high temperatures during the production process. It was determined that the process had a low capability, measuring less than two sigma. Furthermore, the interviews conducted by Ankita and Aviral shed light on the need for extensive structural changes within the company to implement process improvements successfully. Active involvement from stakeholders, including suppliers, managers, work teams and customers, was identified as essential. A clear definition of responsibilities and a continuous improvement approach emerged as crucial factors for ensuring product quality and customer satisfaction. The analysis also highlighted key factors contributing to defects, such as inadequate process monitoring, communication challenges and a lack of emphasis on quality control. On the basis of the analysis conducted by them, they have suggested the following to enhance the company's quality processes and improve RMC production:

- Given the significant defects observed in the test and inspection phase, BLK should focus on strengthening these processes. This can be achieved by implementing stricter quality control measures, providing adequate training to employees involved in testing, and enhancing equipment maintenance to ensure accurate and reliable results.
- High temperatures during the production process were identified as a major quality issue. BLK should analyse the root causes of these temperature fluctuations and take measures to control and stabilise them within acceptable ranges. This may involve optimising equipment settings, conducting regular temperature monitoring and implementing effective cooling systems.

- BLK should focus on improving process capability by implementing robust process controls, conducting regular process audits, and employing statistical process control techniques. This will help ensure that the production process operates within defined limits and meets the required quality standards consistently.
- BLK should actively involve suppliers, stakeholders, managers, work teams and customers in decision-making processes and encourage open communication channels. Clearly defining responsibilities, duties and promoting a culture of collaboration will foster an environment where everyone is aligned towards achieving quality objectives.
- BLK should adopt a continuous improvement mindset by implementing quality management systems such as Six Sigma or TQM.
- BLK should establish robust quality control mechanisms, including regular inspections, quality checks and process audits. This will help identify and rectify potential issues at an early stage, ensuring that the production process consistently meets quality standards.

However, even after the investigation, certain observations were made. For instance, if the control charts indicated process stability, what factors contributed to the occurrence of quality issues? Why were there quality issues despite the company following all quality standards? These questions highlighted additional areas of inquiry and exploration.

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Book Review

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Ranjay Gulati, *Deep Purpose: The Heart and Soul of High-performance Companies*. Harper Business, 2022, 304 pp., ₹567.15.

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Traditional economics looks at the purpose of a firm as profit maximisation. The book argues that mere profit making without central purpose is incomplete and modern strategic management goes beyond this and seeks every firm to decide its central purpose. In the noise surrounding this purpose, firms often confuse the purpose with mission and vision statements. They forget to raise the existential questions of—‘reasons of being’ and ‘why companies do what they do?’ The book *The Heart and Soul of High-Performance Companies* considers that purpose has to be an essential part of most organisations’ management ethos and top-level management agenda. Every organisation needs to have a stated purpose. Today, a significant percentage of organisations use it as a marketing and positioning tool used for virtue signalling, or virtue cloaking customers and stakeholders. Ranjay Gulati, the author of the book, dwells deep into this and has conducted field research and interviewed several leaders to look at the purpose of firms closely. He echoes how companies like Etsy, Lego and Microsoft have a central purpose and also looks where companies go wrong while selecting a central purpose for their firm. His research on fast-growth companies—small and large—led to one common conclusion that successful companies have a perfect strategy combined with execution efficiency that makes them successful in the first place. However, despite being successful, this sense of a ‘void’ or something amiss that would keep them going on that successful path is attributed to lack of clearly defined purpose.

In Chapter 1, ‘What is Purpose Really?’, Ranjay Gulati opines that even the top management of an organisation has a somewhat superfluous idea of the ‘purpose’ of an organisation and often equates it with mission, vision and long-term strategy. The result is a half-hearted approach to understanding, defining and cascading the organisation’s purpose to employees and a signal to customers that the organisations are ‘profit’ leaning versus having a purpose that truly resonates and establishes a connection with the customers. The author takes us into this journey of



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successful companies going into the reasons for their success and what the leaders can learn from it. Having a clearly articulated purpose can engage employees more purposefully than ever before and act as a catalyst for passing on benefits to society in general.

By the author's own volition, in Chapter 2 'Walking on the Razor's Edge', the author calls the organisation's purpose a 'loosey-goosey' topic but all too important. His years of extensive field research highlight the mistakes organisations commit while defining purpose, although unknowingly and the impact it has on the stakeholders. He advises leaders to begin with themselves and be part of the exercise to describe and relate to the defined purpose.

In Chapter 3 of the book, the author looks at the four levers for supreme performance and how they need to be leveraged for sustainable competitive advantage. The author addresses the 'why' part of defining the purpose exercise by listing these four distinct functions the 'purpose' serves—as a compass, compassion, relational and reputational.

Motivational—To not only attract but also retain motivated and engaged employees.

Directional—To have clarity on correct strategic choices.

Reputational—To be a trusted brand to elicit customer loyalty, customers trust companies that have a clear and deep sense.

Relational—A strong network of suppliers, partners and others' ability to build external relations.

In Chapter 4, the author through his field research with successful companies exhibits how purpose-driven culture gives us an idea of the consequences of an engaging versus ill-defined purpose. The trust deficit of customers with today's businesses due to their overtly capitalistic tendencies can harm a business's reputation in the long term. Defining the 'purpose' is not a 'quick-fix' formula but a sustained effort over decades. There is a paradigm shift in organisations' approach towards employees, from creating satisfaction at work and driving engagement towards inspiring employees to be at their best, something that is intrinsically motivating.

In Chapter 5, 'Are You a Poet or Just a Plumber', the author states that the leaders must function both as a plumber and a poet. He quotes the late James March, the former Professor at Stanford in the Graduate School, who said, 'Leaders have not just to be plumbers, but they have to be poets'. Plumbing is putting the organisation chart, defining business and financial models, understanding customers and markets and others, whereas poetry is all about inspiring people, to motivate them and to inspire them to achieve higher goals for the organisation. According to the author, both functions are of equal importance for the success and long-term competitive advantage of the firm. Mere focus on operational task loses sight of the larger goal and mere focus on emotions and passions become a storytelling which fails to align the purpose with corporate structures, systems and processes.

In Chapter 6, 'The Me in Purpose' means to find out the role for the leader in the purpose, to make mistakes, to reflect on them and taking a learning is essential. The purpose is not an inanimate goal, it needs the leader's heart and soul to

drive it passionately. Organisations perform best when their purpose resonates with your own purpose. He cites the example of Microsoft's CEO Satya Nadella; during the time before the turnaround at Microsoft, there was a sense of 'loss of purpose' and how he went around to redefine the purpose with customer centricity and moving from just having an 'idea' to an 'ideal'. He further substantiates his argument with examples of successful companies of the past decade from diverse industries like Etsy, Warby Parker and Gotham Green, all being purpose-driven.

In Chapter 7, 'Escaping the Iron Cage', the author warns the leader that leadership is bestowed upon him by his followers. As long as he follows the purpose and guides others, he wields the power to lead. The author asks the leaders to be like Sankofa bird—a Ghanaian mythological bird to fly forward but never lose sight of where he has come from. The author opines that the top management's job is to work on the 'deep purpose' of the organisation that will have a customer buy-in and comes with a lot of self-belief and conviction of the leader. He substantiates his argument by showing a correlation between a deep purpose and the organisation's high performance.

In Chapter 8, 'From Ideas to Ideals', Ranjay talks about the power of ideals. He cites how the past generation leaders cared less about profit and loss accounting but focused more in attaining the organisational purpose. He also takes up many cases, one being on Mahindra, a firm in India and how the leadership there never loses sight of the ideals. There is an intriguing story about Haryana (India) farmers from our global Indian firm 'Mahindra & Mahindra' showcasing how deep purpose and a high-performance organisation go hand in hand. They follow enlightened business practices, challenge conventional thinking and innovatively use all their resources to drive positive change in the lives of stakeholders and communities across the world. He also takes up the example of startups who are essentially focusing on growth and profit—so the focus is on idea but not ideals. The ideals serve not only moral purpose and also three strategic advantages, that is, expansion plans for organisation, attracting people with similar thought processes and ideals and making of a more cohesive team aligned on common ideals. The firm needs to enact this in the context of an organisation taking these 'ideals' and converting them into meaningful action.

To conclude, the author cautions that merely defining a purpose is not the end of it, more than having a defined purpose what is needed is organisation and stakeholders 'living' that purpose; examples are Enron, Facebook, and Purdue Pharmaceuticals—all of them had a purpose, and somehow their actions were exactly opposite to the stated purpose. There is undoubtedly cynicism surrounding the topic of driving, lots of smoke and mirrors! Some of the recommendations include:

- Be more conscious of the trade-off choices and repercussions they might have on the short and long-term value for the organisation.

- The purpose should be systematically built into every function of the organisation to enhance performance.
- A direct correlation exists between autonomy, collaboration and purposeful work; organisations should strive to create autonomous structures and roles.
- Emotions play a significant part in communicating purpose effectively to build a committed community of stakeholders.
- They are fostering a culture that creates natural employee affinity towards purpose and their purposes.

Overall, the book is a fascinating take on the role inspiration, and profound purpose plays in an organisation's success and how it should be enacted in the context of an organisation—a must-read for business leaders and business students.

Review of Professional Management: A Journal of Management

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