THE MET LEAGUE OF COLLEGES
MET
AS SHARP AS YOU CAN GET

Bhujbal Knowledge City

MET INSTITUTE OF MANAGEMENT

MET MANAGEMENT REVIEW

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THE MET LEAGUE OF COLLEGES

MET

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Bhujbal Knowledge City

Mahatma Jyotiba Phule
(1827-1890)

Shrimati Savitribai Phule
(1831-1897)

OUR FAITH

न चौर हार्यम् नच राज हार्यम्।
न भातृभाज्यम् नच भारकारी।।
व्यये कृते वर्धते एव नित्यम्।
विद्याधनं सर्वधन प्रधानम्।।

Knowledge can neither be stolen by a thief,
nor snatched by a king.
It is indivisible unlike ancestral property,
it never burdens the bearer,
it multiplies manifold when offered to others.
Knowledge is the supreme form of wealth.

MET INSTITUTE OF MANAGEMENT VISION

To emerge as a leading management Institute developing globally relevant, socially responsible and emotionally competent management professionals and entrepreneurs.

MET INSTITUTE OF MANAGEMENT MISSION

1. To empower management professionals with the latest applications offering conceptual and experiential learning.
2. To develop business leaders focused on principles of purpose, people, profit and planet.
3. To nurture managerial competence and a sustainable, growth mindset.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

1. To apply the domain knowledge, interdisciplinary skills & technological proficiency as entrepreneurs and corporate professionals.
2. To exhibit value-based managerial competencies in fulfilling corporate and leadership responsibilities.
3. To facilitate lifelong learning for sustainable development and professional excellence.

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Bhujbal Knowledge City
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MET League of Colleges

MET League of Colleges is a conglomerate of premiere educational institutions, driven by a single-minded focus on imparting quality education, to make students sharp. Training is imparted round-the-clock, seven days a week. Projects and assignments are given utmost importance and students learn on the job. Application-oriented knowledge, garnered in the lecture halls, is applied to industry assignments. The faculty spares no effort to make the students razor sharp, so that they make their mark in the corporate world. No effort has been spared, to create an environment that encourages students, to push the limits of their minds. All this, to help young professionals face the challenges of life. And make their mark in the corporate world.

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- Institute of Mass Media
- Asian Management Development Centre
- Centre for Insurance Training, Research & Development
- Institute of Pharmacy
- Institute of Medical Sciences
- Institute of Information Technology
- Institute of Software Development and Research
- Institute of Computer Science
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- School of Architecture and Interior Designing

At MET, over four thousands students and faculty are involved in delivering unique learning systems, through ultra modern infrastructure and academic rigour. MET Institutes are ISO certified, with affiliations to the University of Mumbai, Savitribai Phule Pune University, Directorate of Technical Education, All India Council of Technical Education, MSBTE, Pharmacy Council of India, C-DAC - Ministry of Communications and Information Technology, The Chartered Insurance Institute (CII), London.

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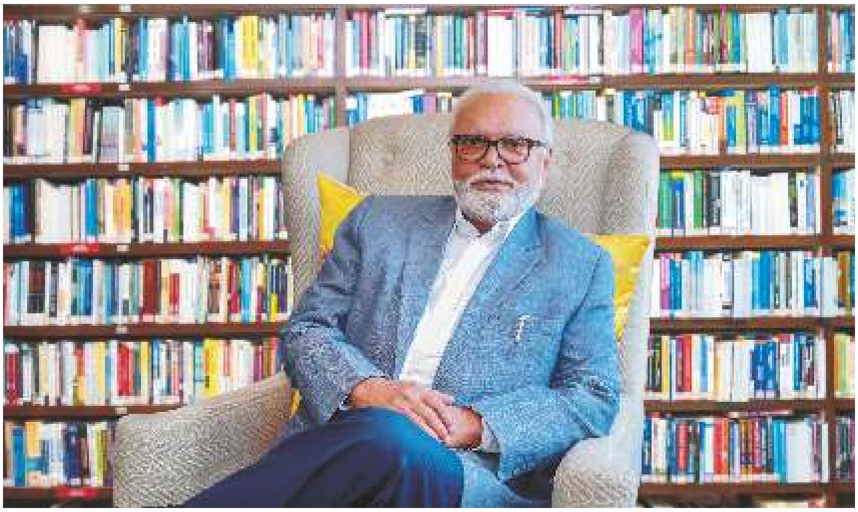
From the Chairman's Desk



"Every cloud has a silver lining."
- John Milton

The Hope is rising; Optimism is galloping and Faith is stirring hearts again, even before the overseers of nations announce that the worldwide phenomena of pandemic that inflicted health, financial and economic loss is over. Though the unexpected and impossible happened and we were caught off balance, newer ways of doing things are well within reach. MET Institutes rose to the challenge, energizing millions of young minds, fighting the adversity, we retooled, redesigned and delivered seamless digital learning engagements to the youth across the country quenching their thirst of knowledge.

We at MET have come up with alternative and augmentative education systems to ensure that there is no loss in the learning, equipping and empowering. We established seamless learning platforms across our campuses located at Bhujbal Knowledge City in Mumbai and Nashik delivering wholesome learning inputs, meeting stakeholder appreciation. With the return of partial or whole normalcy, we look forward to edify young minds in the virtual, hybrid or offline environment delivering world class inputs across Pharma, Engineering, Architecture, IT, Mass Media, Management, Animation and other domains, overcoming all past delivery hurdles. Blessed by the state of the art platforms and technologies accessed by us, our committed faculty and staff are leaving no stone unturned to ensure competency building and skilling surpasses demands of the marketplace. Through our MET Rishikul Vidyalaya we are continuing to expose the school kids, blending the traditional pedagogy with the Cambridge learning systems till the A Level.

We are building links and partnerships with global players for carrying forward the dynamic learning processes at both undergraduate and postgraduate levels. We are continuing our focus on injecting the spirit of Creativity-Innovation in the pedagogy so that the students are nudged and exposed to solution oriented, problem solving dynamic learning platforms, as the gateway to incubators and start-up culture.

Believing, the silver lining of the clouds will soon give way to the full bright sunshine.

Chhagan Bhujbal
Hon. Founder Chairman
Mumbai Educational Trust

About MET Institute of Management

MET Institute of Management

Since its inception three decades ago MET Institute of Management, a top B-School in Mumbai has focused on developing industry ready management professionals shaped to cross industry threshold to seek their chosen place under the Sun. Academic and scholastic rigor are finely woven into application oriented skill sets which positions the MBA students to hit the ground running as they face the challenges of market place and society. The structured learning systems are blended with the latest tools and technologies offered by the digital world. Therefore, despite Pandemic, a unique online learning experience was offered to the management students.

The well-equipped libraries with 64,000 plus books and journals are e-enabled to offer robust theoretical inputs to the MBA students. The close connection and networking with industry integrated by thousands of corporate-successful alumni offers deep insights into the real business world and a vibrant industry academia platform.

Thus, despite statutory limitations students could access and benefit from our information and technology centers and learning aids supported by the latest audio visual facilities at our complex. A high-tech convention Centre, well equipped seminar halls and state of the art networked virtual classrooms provide a multidimensional exposure to the students as we offer a holistic immersion to the MBA students as they step into the global business arena. That is why MET Institute of Management is considered as one of the best MBA colleges in Mumbai. It remains a much sought after premium B-School in Maharashtra in which graduates and experienced MBA aspirants writing MAH-CET, CAT, CMAT, XAT, ATMA, MAT and other prestigious entrance exams seek to secure admission.

Director Speak

Dr. Swati Lodha
Director MET IOM

Dear Readers,

Greetings from the Research Cell of MET Institute of Management.

Business Research has been an integral part of management education globally. With the accelerated rate of change, in the post COVID era, research is undergoing a paradigm shift. We are leaning towards transformative research which challenges our current understanding of life in terms of science, engineering, education, environment and others. With disruptive digital and AI technology tools flooding the markets and global environmental challenges plummeting our growth parameters, transformative research has become relevant like never before. Our journal is an attempt to turn research achievement into productive forces full of meaningful impact.

Research allows us to expand our knowledge in a concrete and precise manner which in turn, allows for better human evolution.

This edition of MMR is a collection of finance research papers, dwelling deep into transformative areas like equity research and mergers and acquisitions.

With a line up of two National and International Research Conferences at MET IOM in the year 23 & 24 (based on our five year strategic plan), we are committed to bring better research to your mindsteps.

Dr. Swati Lodha
Director
MET Institute of Management

Analysis of Working Capital Management in the Retail Sector using Financial Ratios: A review of More Retail Limited

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Dr. Sandeep Chopde - Associate Professor, MET Institute of Management

ABSTRACT

The role of Working Capital and its Management is important in evaluating the financial performance in almost all kinds of industries, but it is more important in Multi- Chain Retail sector due to its unique nature. The current Study uses ratio analysis and working capital trends as a technique to understand Working Capital Management with four years of financial data since 2016 to 2019 collected from M/s. More Retail Limited ("Company") which has presence in Supermart and Hypermart formats.

The current Study observed that during the period 2015-16 to 2018-2019, the working capital of the Company has increased in the year 2018-2019 against 2015-16. In the year 2015, there was a decrease in the working capital. It assumes that the current ratio of the Retail Sector is around 3, while it's noticed that the Current Ratio of More Retail Limited was 1.30 in the year 2018-19. The Quick Ratio shows a satisfactory position from the year 2018-2019 as against 2015-16. While the Debt-equity ratio changed from -0.78 to 3.11 in 2018-19. The Proprietary Ratio of the company was changed from -6.51 to 0.11. The Fixed asset turnover ratio indicates the relationship between sales and fixed assets was improved to 21.67 in 2019 from 18.67 in 2016 indicating proper utilization of Assets. The Working Capital of More Retail Limited has shown an increase in trend in the year 2018 -19 which was funded through long-term sources.

Keywords: Working Capital Management, Profitability Ratio, Cash Conversion Cycle

I. Introduction

There is ample literature available in the field of Working Capital Management in particular reference to the Indian Retail Sector; it is observed that there are very few studies which had been undertaking analyses of an individual retail entity. The present study has made an attempt to analyse the financial position of More Retail Limited using Ratio and Working Capital Trends as a technique.

This present study covers the analysis and interpretation of the financial position of More Retail Limited using the Ratio and analysis of interpretation of Working Capital. Analysis and interpretation of Working Capital is important so to evaluate, analyse and to predict the future financial health of any entity. The paucity of working capital can create many problems while the adequacy sometimes reflects the risk adverse nature and loss of profitability in lieu of liquidity. The working capital is also related with the cash-flow as there would be delay in receipt of the cash post the sales. The effective working capital management address this issue and maintain the balance between cash outlay and inflows so to maintain the continuity of the business operations without any interruptions.

There are examples that due to inadequate working capital, the business has to stop its activities which sometimes cause the firm to fail economically. The retail sector is no different to the problem of working capital as its survival is dependent on the cash flows.

The more retail ltd. formerly known as Trinethra was established by K Anjaneyulu along with his wife. In 2005-06 it has expanded in Kerala and Karnataka Aditya Birla Group entered the retail industry with the acquisition of Trinethra Super Retail in year 2007.Trinethra Super Retail had a strong footprint with over 172 stores spread across four states - Andhra Pradesh, Karnataka, Tamil Nadu and Kerala. In Tamil Nadu and Andhra Pradesh, Trinethra brand was being used, while in Karnataka and Kerala, Fab mall brand was being used. Later, all the stores were rebranded as "More. Stores.[1]

In 2019 Witzig Advisory Acquires Aditya Birla Retail from AB Group and rename it as 'More Retail Limited' and recently it is converted into private entity as More Retail Pvt. Ltd. And crossed 900+ stores across the country.

The present study is based upon the Financial Information of the single entity i.e. More Retail Limited which has been considered as a study sample for the current research. One of the limitations of the study is it is based on only one case, hence, the result of this research study may not be adequately generalized. There are many studies undertaken to understand the Financial Performance of an Entity using different financial parameters. The financial performance is dependent on different variables which are not only quantitative but also have relevance to the qualitative aspect of the business. Some of those studies are reviewed in the present research.

II. The Review of Literature and Research Methodology

II (A) Review of Literature

Kumar Sanjay Sawarni, Sivasankaran Narayanasamy, Kanagaraj Ayyalusamy (2020), studied the impact of the efficiency of working capital management (WCM) on the performance of a sample of Indian companies. The study observed that Working Capital Management efficiency has a significant impact on the performance of the firms in the study sample.[2]

Padachi Kesseven (2006) analysed the Working Capital Management trends and their impact on firms' performance. The study observed that there is a notable relationship between working capital management and profitability.[3]

Muthuvelan M. (2016) studied the financial performance of Pantaloon Retail (I) Ltd. Her study noticed that working capital management of the company is comparatively good, but the company has to concentrate on its sale aspects than the monetary aspects so to remain more profitable.[4]

Uyar Ali (2009) examines the relationship of the cash conversion cycle with firm size and profitability of the corporations listed on the Istanbul Stock Exchange (ISE) for the year 2007.

The study noted that retail/wholesale industry has shorter CCC than manufacturing industries as it has shorter days in inventory due to the absence of production but instead storing them as a finished item. . Secondly, the retail/wholesale industry makes cash sales or credit sales with short maturity. Moreover, the retail/wholesale industry is slower in paying its accounts payable to its suppliers.[5]

K. Madhavi (2014), studied the Working Capital Management of Andhra Pradesh Paper Mills Limited (APPML) and Seshasayee Paper Mills Limited (SSPML). Her study observed that the Cash ratio of APPML was not satisfactory and suggested that the APPML should take corrective actions to utilized the idle cash and bank balances or shall be utilize in paying the short term liabilities.[6]

In the light of above discussion, the present paper made an attempt to analyse the financial performance of More Retail Limited was analyzed with the help of Ratios, working capital trends, and is calculating the changes in working capital. Duration of the data in order to analyze performance the financial data was considered for a period of 04 (Four) years from 2015 to 2019. The data was retrieved from the website of More Retail Limited mentioned in the Audited Balance Sheets7 when it was available in the public domain.

II (B) Research Methodology

The data have been suitably rearranged, classified, and tabulated according to the requirements of the study and the present research is based on the following criteria

Table 1: Research Design for the Study

Sr. No.	Parameters	Particulars
1	**Nature of study**	Explanatory in nature and the data is analyzed using ratios and trends in working capital. While the presentation of this data is done with the help of a case study on More Retail Limited.
2	**Sample Size**	1
3	**Sample Selection**	Purposive

4	**Type of Data**	Primary and Secondary data including the financial information of the More Retail Limited for the period 2015-16 to 2018-19
5	**Tools used for the analysis**	Ratio Analysis and Trends in Changes of the Working Capital

In this paper, a case study approach is being used to do exploratory research on Working Capital Management in the Retail Industry. Exploratory research is defined as a research type that has an emphasis on the discovery of ideas and insights. These Methods aim to get some experiences and insights from respondents on the Retail Industry.

In the current study, the data is analyzed using qualitative and quantitative techniques. The quantitative techniques are examined why and how decisions are made and more inclined towards establishing co-relationship. The objective of qualitative research is to gain an in-depth understanding of certain behaviour and the reasons behind such behaviour. It could be assumed that the qualitative method is more relied upon to establish a causal relationship. Instead of focusing only on what decisions are made, qualitative research examines why and how they are made.

This study consists of a review of literature and a case study based upon observation and analysis. Therefore, research has characteristics of both empirical and theoretical study. The theoretical part focuses on explaining the theory behind Working Capital Management and the Retail Industry to provide deeper insight into the subject matter of the case study.

A lot of previous research has been done on the subject and as a consequence, a vast amount of relevant literature is available. The sources that were used in literature research were mainly obtained from online reference libraries and electronic databases. Case study research is an inquiry that focuses on describing, understanding, predicting, and/or controlling the individual.

The Case Study part of the study focuses on the case company and aims to fulfil the goals and objectives of the research by completing and documenting the Working Capital Management of the Retail Industry with the Case Study of More Retail Limited.

I. Data Analysis and Interpretation

A. Working Capital Management

It's the main part of the Company's capital that is required to finance current assets. The working capital can also be defined as the difference between the current assets and current liabilities.

I) ***Gross Working Capital:*** The Company's investment in current assets means cash and marketable securities, receivables, and inventory. The assets, which are all converted into cash within the current year are called current assets. Here, cash on hand, debtors, accounts and bills receivable, stock and short-term securities are current assets.

Gross Working Capital = Total Current Assets of the company during the financial year.

II) Net Working Capital: It is calculated by subtracting the Current Liabilities from the Current Assets. In normal case, the Current Assets should be optimally more than Current Liabilities. Financing the current assets requires a good mixture of long-term and short-term funds.

A specific quantity of net working capital is core and permanent for every firm, so it can be financed with long-term funds. The Net working capital is directly related to the current ratio.

In this paper, financial data of the More Retail Ltd. used to calculate the net working capital and current ratio.

Net Working Capital = Total Current Assets –Total Current Liabilities

Table 2: *WORKING CAPITAL FOR MARCH 2019*

PARTICULARS		March 2019 (Rs. in Crores)
Current Assets		
	Inventories	368.6
	Debtors	19.85
	Cash & Bank Balances	126.97
	Loans & Advances	2.23
	Other Current Assets	128.26

Current Liabilities	Total Current Assets (A)	**645.91**
	Creditors	393.5
	Other Current Liabilities	97.64
	Provisions	6.75
	Total Current Liabilities (B)	**497.89**
Gross Working Capital (A)		**645.91**
Net Working Capital (A-B)		**148.02**

Source: Audited Balance sheet of the Company

Table 3: WORKING CAPITAL FOR MARCH 2018

PARTICULARS		March 2018 (Rs. in Crores)
Current Assets		
	Inventories	312.79
	Debtors	14.93
	Cash & Bank Balances	49.51
	Loans & Advances	3.62
	Other Current Assets	134.69
	Total Current Assets (A)	**515.54**
Current Liabilities		
	Creditors	1739.17
	Other Current Liabilities	434.1
	Provisions	6.43
	Total Current Liabilities (B)	**2179.75**
Gross Working Capital (A)		**515.54**
Net Working Capital (A-B)		**-1664.21**

Source: *Audited Balance sheet of the Company*

Table 4: *WORKING CAPITAL FOR MARCH 2017*

PARTICULARS		March 2017 (Rs. in Crores)
Current Assets		
	Inventories	336.90
	Debtors	20.61
	Cash & Bank Balances	52.58
	Loans & Advances	192.71
	Other Current Assets	3.89
	Total Current Assets (A)	**606.77**
Current Liabilities		
	Creditors	1085.25
	Other Current Liabilities	1,241.33
	Provisions	9.28
	Total Current Liabilities (B)	**2335.86**
Gross Working Capital (A)		**606.77**
Net Working Capital (A-B)		**-1729.09**

Source: *Audited Balance sheet of the Company*

Table 5: *WORKING CAPITAL FOR MARCH 2016*

PARTICULARS		March 2016 (Rs. in Crores)
Current Assets		
	Inventories	328.18
	Debtors	21.65
	Cash & Bank Balances	118.45
	Loans & Advances	113.83
	Other Current Assets	3.58
	Total Current Assets (A)	**585.69**
Current Liabilities		
	Creditors	1104.78
	Other Current Liabilities	1,021.65
	Provisions	8.28
	Total Current Liabilities (B)	**2134.71**
Gross Working Capital (A)		**585.69**
Net Working Capital (A-B)		**-1549.02**

Source: *Audited Balance sheet of the Company*

A. SCHEDULE OF CHANGES IN WORKING CAPITAL:

Working capital is defined as the difference between current assets and current liabilities. The schedule of changes in working capital is prepared to find out the increase or decrease in working capital during the year. Current assets and current liabilities are taken to schedule working capital at the end of the current year and are compared with that of the previous year.

Table 6: *SCHEDULE OF CHANGES IN WORKING CAPITAL FOR FY 2016-17*

PARTICULAR		2017	2016	CHANGES IN WORKING CAPITAL	CHANGES IN WORKING CAPITAL
CURRENT ASSETS				INCREASE IN 2017	DECREASE IN 2016
	Inventories	336.98	328.18	8.80	-
	Debtors	20.61	21.65	-1.04	-
	Cash & Bank Balances	52.58	118.45	-65.87	-
	Loans & Advances	192.71	113.83	78.88	-
	Other Current Assets	3.89	3.58	0.31	-
	Total Current Assets (A)	606.77	585.69	21.08	-
CURRENT LIABILITIES	Creditors	1085.25	1104.78	-	-19.53
	Other Current Liabilities	1,241.33	1,021.65	-	219.68
	Provisions	9.28	8.28	-	1.00
	Total Current Liabilities (B)	2335.86	2134.71	-	201.15
		-1729.09	-1549.02		
Working Capital (A-B)		-180.07			-180.07
Increase in Working Capital		-1729.09	-1549.02	21.08	21.08

This difference shows either an increase or decrease in working capital. Individual current items (current assets and current liability) are compared to find out the effect of changes in working capital. An increase in the current asset will lead to an increase in working capital and vice versa. On the other hand, an increase in current liabilities will lead to a decrease in working capital and vice versa.

INTERPRETATION: In the year 2016- 17, company reported a negative working capital and short term funds are deployed to fund the long-term use.

Table 7: SCHEDULE OF CHANGES IN WORKING CAPITAL FOR FY 2017-18

PARTICULAR		2018	2017	CHANGES IN WORKING CAPITAL	CHANGES IN WORKING CAPITAL
Current Assets				INCREASE IN 2018	DECREASE IN 2017
	Inventories	312.79	336.98	-24.19	-
	Debtors	14.93	20.61	-5.66	-
	Cash & Bank Balances	49.51	52.58	-3.07	-
	Loans & Advances	3.62	192.71	-189.09	-
	Other Current Assets	134.69	3.89	130.80	-
	Total Current Assets (A)	**515.54**	**606.77**	**-91.23**	-
Current Liabilities	Creditors	1739.17	1085.25	-	653.92
	Other Current Liabilities	434.1	1,241.33	-	-807.23
	Provisions	6.48	9.28	-	-2.80
	Total Current Liabilities (B)	**2179.75**	**2335.86**	-	**-156.11**
		-1664.21	**-1729.09**		
Working Capital (A-B)		64.88			64.88
Increase in Working Capital		-1664.21	-1729.09	-91.23	-91.23

INTERPRETATION: In the Year 2017- 18, the working capital was increased and positive. This increase in working capital was funded through long term sources.

Table 8: SCHEDULE OF CHANGES IN WORKING CAPITAL FOR FY 2018-19

PARTICULAR		2019	2018	CHANGES IN WORKING CAPITAL	CHANGES IN WORKING CAPITAL
Current Assets				INCREASE IN 2019	DECREASE IN 2018
	Inventories	368.6	312.79	55.81	-
	Debtors	19.85	14.93	4.92	-
	Cash & Bank Balances	126.97	49.51	77.46	-
	Loans & Advances	2.23	3.62	-1.39	-
	Other Current Assets	128.26	134.69	-6.43	-
	Total Current Assets (A)	**645.91**	**515.54**	**130.37**	-
Current Liabilities	Creditors	393.5	1739.17	-	-1,345.67
	Other Current Liabilities	97.64	434.1	-	-336.46
	Provisions	6.75	6.48	-	0.27
	Total Current Liabilities (B)	**497.89**	**2179.75**	-	**-1,681.86**
		148.02	**-1664.21**		
Working Capital (A-B)		1812.23			1,812.23
Increase in Working Capital		148.02	-1664.21	130.37	130.37

INTERPRETATION: In the Year 2018- 19, the working capital was positive and it was funded through long term sources.

C. RATIO ANALYSIS OF WORKING CAPITAL IN MORE RETAIL LIMITED WITH THE LITTLE LAW:

A. RATIO ANALYSIS

I) Profitability Ratio Profitability is an indication of the efficiency in the operations of the business is carried on 2015-19:

1. OPERATING EXPENSES RATIO:

This ratio designates the proportion of the cost of goods sales, and also operating expenses to the net which does not cover depreciation & amortisation and other expenses.

Operating Expenses Ratio =

$$\frac{Goods\ Sold + Operating\ Expenses}{Net\ Sales} X\ 100$$

Table 9: OPERATING RATIO

SR. NO.	YEAR	OPERATIN G PROFIT	NET SALES	OPERATING PROFIT RATIO in %
1	2015-16	358.53	3,509.37	10.21
2	2016-17	426.63	4,193.50	10.17
3	2017-18	447.35	4,064.02	11.00
4	2018-19	464.48	4,285.03	10.83

INTERPRETATION: Increasing the cost of operating expenses over the past four years the operating ratio goes to an unsatisfactory position. Therefore, the management should control the increasing rate of the cost of operating expenses.

2. OPERATING PROFIT RATIO:

It is the ratio of profit made from operating sources to sales, before deducting the interest, depreciation & amortization and other expenses, usually shown as a percentage.

Operating Profit Operating = $\frac{\textit{Profit Ratio}}{\textit{Sales}} \times 100$

Table 10: OPERATING PROFIT RATIO

SR. NO.	YEAR	COST OF GOODS SOLD + OPERATING EXPENSES	NET SALES	OPERATING RATIO in %
1	2015-16	3591.6	3,509.37	102.34
2	2016-17	4255.66	4,193.50	101.48
3	2017-18	4266.34	4,064.02	105.00
4	2018-19	4231.66	4,285.03	98.75

INTERPRETATION: The operating profit ratio was maintained between 10 to 11 % during the study period.

3. Return on the Capital Employed RATIO:

It is the return on the capital employed that shows the percentage of return on the total capital employed in the business. (ROCE) It indicates the percentage of return on the total capital employed in the business.

ROCE Ratio

$$= \frac{\textit{Operating Profit (EBIT)}}{\textit{Captial Employed}} \times 100$$

Table 11: OVERALL PROFIT RATIO

SR. NO.	YEAR	OPERATING PROFIT EBIT	CAPITAL EMPLOYED	ROCE RATIO in %
1	2015-16	-216.37	-1263.81	17.12
2	2016-17	-169.83	-1445.33	11.75
3	2017-18	-85.01	-1376.44	6.17
4	2018-19	-87.83	437.32	-20.00

INTERPRETATION: The Overall profit ratio for the company though shows a positive number, but it is due to the division of two negative numbers i.e. losses and erosion of the Equity block due to the continuous losses. This results a negative number for the Capital Employed. The situation is improved in 2019 ,due to the infusion of additional equity funds that made Capital Employed number positive but the due to the loss incurred, the company is showing a negative number for the overall profit ratio. The Table no. 11 indicates that Company need to improve the cost efficiency also rationalize the capital employed so to make it effective.

4. TURNOVER RATIO: The turnover ratios are also called activity or efficiency ratios. They show the efficiency with the capital employed is spin in the business.

THE OVERALL PROFITABILITY OF A BUSINESS DEPENDS ON TWO FACTORS:

i. The rate of return on the capital employed.

ii. The turnover, i.e. the speed at which the capital employed in the business spins. The higher the rate of rotation, then the greater will be the profitability.

Turnover Ratio = $\frac{\textit{Sales}}{\textit{Capital Employed}}$

Table 12: TURNOVER RATIO

SR. NO.	YEAR	SALES	CAPITAL EMPLOYED	TURN OVER RATIO
1	2015-16	3,509.37	-1263.81	-2.77
2	2016-17	4,193.50	-1445.33	-2.90
3	2017-18	4,064.02	-1376.44	-2.95
4	2018-19	4,285.03	437.32	9.80

INTERPRETATION:

The turnover ratio was negative till year 2017-18 as Capital employed was negative. In the year 2018-19, the infusion of equity funds led to a Positive Capital employed and hence a positive number of turnover.

5. GROSS WORKING CAPITAL TURNOVER RATIO: The ratio indicates whether the working capital has been effectively utilized in sales or not. For a small amount of the working capital a company can achieve a large volume of sales, this is an indication of the operating efficiency of the company.

Gross Working Capital Turnover Ratio =

$$\frac{\textit{Net Sales}}{\textit{Gross Working Capital}}$$

Table 13: GROSS WORKING CAPITAL TURNOVER RATIO

SR. NO.	YEAR	NET SALES	GROSS WORKING CAPITAL	GROSS WORKING CAPITAL TURN OVER RATIO
1	2015-16	3,509.37	585.69	6.0
2	2016-17	4,193.50	606.77	6.9
3	2017-18	4,064.02	515.54	7.9
4	2018-19	4,285.03	645.91	6.6

INTERPRETATION: The Company's working capital ratio has been decreasing up to 2018-19. It reaches 6.6 in 2018-2019 from 7.9 in 2017-18. Therefore, the company should take the necessary steps for the effective utilization of working capital.

6. FIXED ASSET TURN OVER RATIO: This ratio indicates that investments in fixed assets contribute toward sales. A comparison with a previous period indicates whether the investment in fixed assets is judicious or not.

Fixed Assets Turnover Ratio = $\frac{\textit{Net Sales}}{\textit{Net Fixed Assets}}$

Table 14: FIXED ASSET TURNOVER RATIO

SR. NO.	YEAR	NET SALES	NET FIXED ASSETS	FIXED ASSET TURN OVER RATIO
1	2015-16	3,509.37	187.99	18.67
2	2016-17	4,193.50	190.04	22.07
3	2017-18	4,064.02	201.03	20.22
4	2018-19	4,285.03	197.84	21.67

INTERPRETATION: It has started increasing from the year 2015-to 2019 and finally it increases in 2019, whereas in the year 2019 it reached a maximum of 21.67.

7. SOLVENCY RATIO:
i. SHORT TERM SOLVENCY RATIO:

a. CURRENT RATIO: This ratio shows the Company's commitment to meeting its short-term liabilities. The assets that will be converted into cash within a year are called current assets. A company's debts or obligations that are due within one year are called current liabilities.

Current Ratio = $\frac{\textit{Current Assets}}{\textit{Current Liabilities}}$

Table 15: CURRENT RATIO

I

SR. NO.	YEAR	CURRENT ASSETS	CURRENT LIABILITIES	CURRENT RATIO
1	2015-16	585.69	2,134.71	0.27
2	2016-17	606.77	2,335.86	0.26
3	2017-18	515.54	2,179.75	0.24
4	2018-19	645.91	497.89	1.30

INTERPRETATION: The current ratio was less than one till 2018 while it became more than one in the year 2019 indicating a positive Working capital. The working capital for the Year 2017-2018 and 2018-2019 was funded through long-term sources.

b. QUICK RATIO: It's the ratio of liquid assets to current liabilities. We cannot consider prepaid expenses and stocks as liquid assets.

Quick Ratio = $\frac{\textit{Liquid Assets}}{\textit{Current Liabilities}}$

Table 16: QUICK RATIO

SR. NO.	YEAR	LIQUID ASSETS	CURRENT LIABILITIES	QUICK RATIO
1	2015-16	110.45	2,134.71	0.05
2	2016-17	52.58	2,335.86	0.02
3	2017-18	1.50	2,179.75	0.007
4	2018-19	22.16	497.89	0.044

INTERPRETATION: For the average run, a 1:1 ratio is more acceptable. This ratio is 0.05 in the year 2015 which had a lesser thing in all those subsequent years, so it cannot meet its liabilities. In the year 2018, it has 0.07 which utilizes less efficiency.

ii. LONG TERM SOLVENCY RATIO:

a. DEBT EQUITY RATIO:

It can be used to measure the relative proportions of the outsider's funds and shareholder's funds invested in the company. Here, the Shareholder's funds include preference share capital, equity share capital, profit & loss a/c, and capital reserves.

Debt Equity Ratio = $\frac{\textit{Long Term Debt}}{\textit{Shareholders Fund}}$

Table 17: DEBT EQUITY RATIO

SR. NO.	YEAR	LONG TERM DEBT	SHAREHOLDERS FUND	DEBT EQUITY RATIO
1	2015-16	4,401.18	-5,671.74	-0.78
2	2016-17	4,846.78	-6,320.18	-0.77
3	2017-18	2,506.77	-3,891.05	-0.64
4	2018-19	324.19	104.39	3.11

INTERPRETATION: The shareholders' funds were increased due to the infusion of fresh capital and the long-term debts was repaid during the study period. This indicates the positive position of the company as compare to the previous years on account of positive number in the equity block due to the infusion of funds.

b. PROPRIETARY RATIO:

The proprietary ratio is the relationship between the proprietor's funds and total assets.

Proprietary Ratio = $\frac{\textit{Shareholders Fund}}{\textit{Total Assets}}$

Shareholders' Funds = Share Capital + Reserves and Surplus

It indicates the proportion of shareholders' funds in the total assets. At the time of winding-up, there is less danger to the creditors when the proprietary ratio is high.

Table 18: PROPRIETARY RATIO

SR. NO.	YEAR	SHAREHOLDERS FUND	TOTAL ASSETS	PROPRIETARY RATIO
1	2015-16	-5,671.74	870.90	-6.51
2	2016-17	-6,320.18	890.53	-7.10
3	2017-18	-3,891.05	803.31	-4.84
4	2018-19	104.39	935.21	0.11

INTERPRETATION: It is clear that the proprietary ratio of the company has changed the signed that is from negative number towards positive number during the study period. This is due to an increase in shareholders' funds and reserves and surplus. It indicates efficient management strategy to infuse of shareholders' funds and less risk to creditors in the event of wind up.

IV. SUMMARY OF FINDINGS

Due to the purchase of current assets, there was an increase in current assets during the period 2018-2019. During the study period, the working capital increased in the year 2018-2019. In the year 2015, there was a decrease in the working capital. In the year 2019 other current liabilities were decreased. The standard current ratio is 3:1. The Company has greater solvency in the year 2019 i.e. 129.73% whereas in the year 2016, the ratio is 4:1 so the company has not maintained an ideal ratio.

The quick ratio shows a satisfactory position from the year 2018 to 2019. The operating ratio shows anunsatisfactory position in 2015-16. The debt-equity ratio increased from 2018 to 2019. The proprietary ratio of the company decreased up to 2015 and suddenly increase in 2019. The fixed asset turnover ratio indicates the relationship between sales and fixed assets. It reached to a number 21.67 in the year 2019.

More Retail Limited is using 30% of the Current assets for payment of Trade Payables and Taxes, and has very limited scope for improvement, but, if they manage their working capital effectively out of many needs they have through proper management of their miscellaneous current assets may be brought down their dependency on Current assets.

The basic objective of working capital management is to minimize the cost to the Company whether managing cash, receivables (Sunday debtors) or inventory, or miscellaneous current assets, minimize risk to the company on receivables, and ensure just level of inventory to operate full level of capacity with minimum inventory. It also implies that as far as possible miscellaneous current assets should be utilized for the company's operations. In other words, working capital management should aim to optimize production and sales with minimum risk and cost.

However, because scientific techniques have not been utilized and decisions have been taken on ad hoc basics, this had not been achieved by the Retail Sector. It seems from the analysis of data of selected sample Companies that in the Retail Sector, by and large, there is no proper working capital management. Suggested by experts that, every decision has been left out to market forces without working out a cost-benefit analysis or applying various formulas. This is very much evident from wide variations in various ratios from company to company and different years for the same company.

Cash management is fragile as a result of which cash ratio to total current assets and sales are very high for the Retail Sector. With the above general observations, one can draw several conclusions about the economic health of the Retail Sector and various aspects of working capital. The Industry at present is passing through the buyers' phase of the market. This state of the Retail Sector is expected to continue soon too because new capacity is being created faster than growth in demand.

This has increased competition and working capital management has become more difficult. On one side, customers have to be accommodated to compete in the market, but at the same time, all possible economies must be achieved in the management of cash, receivables, and inventory to maintain and improve profitability due to many changes in the Tax regime. Some of the industrial houses are in the process to sell their business to other dominant players, which should help to improve working capital management and profitability in the industry likes Future Group sold their Retail Business in the recent past to Reliance Retail Limited as come out of debt.

V. SUGGESTIONS

In an Indian context, the Retail Sector's adequate concern is not shown for proper management of working capital. To make the industry conscious of the need for better management. Retailer Association of India should create awareness by arranging seminars and workshops in which top management and senior officers from the finance and marketing departments of the industry should be invited and all-out efforts should be made to reduce loans and advances, which is quite possible through firm policy and its proper implementation.

VI. CONCLUSION

A. CREDIT MANAGEMENT: In the event of liquidity issues, Creditors have to think about delaying payments. An extra focus is therefore taken on punctual and accurate invoicing in combination with active and effective credit management. Made sure that start communicating with the biggest creditors immediately, rather than waiting until the payment deadline has passed. The aim is to obtain confirmation that invoices will be paid (on time). By doing this company has also been able to identify any other payment problems at an early stage. Financial instruments such as factoring can also offer a solution in this respect.

B. CREDITOR MANAGEMENT: One way of improving working capital position in the short term, is to use the lag principle in paying suppliers, and/or be adopted. Such an approach can, however, cause serious damage to relationships with suppliers and could lead to delivery problems, but with the help of better relations and a promise to pay digest the issue.

C. STOCK: Due to the corona virus pandemic Supply chains, and particularly the supply of goods from Lock-down regions, have been seriously disrupted. They are not yet back up to speedy operations in factories and logistics have been halted for several weeks due to additional Compliances in many cases.

To reduce the impact on the company, we focused on the most critical products and supplies first. Make sure we know when we can expect to receive the following order. We have also investigated whether similar goods can be purchased from other suppliers. It may be that liquidity problems mean that we can only purchase some of the goods that we want.

D. CASH FLOW FORECASTING: In times of liquidity problems it is extremely important to have an insight into cash flows for the short and medium-term. Increase the predictability and frequency of the liquidity forecast in the short- term and enhance it with, for example, credit management insights. This was ensured that we are aware of any potential problems and can take suitable measures in good time.

E. SUGGESTIONS: Based on the analysis and subsequent findings it is concluded that the working capital management of the company is comparatively good during the study period. However, the Company has to improve in certain areas to bring the position better. In the year 2019, there was an Increase in the working capital as compare with the previous year. The company has to invest more in fixed assets to improve its working capacity. In the last year of the study 2019. When compared to the previous years, it is found that losses were reduced but the profits are still not in sight. Therefore, the company is shall have a control over its expenses in all possible ways. The efficiency ratio of the company shows good performance. Still, the company has to concentrate on its sales aspect than the monetary aspects because it will make the Company more profitable. The company has a good control over debtors as of 2019; the Outstanding Debtors is of 1.47 Days as against 1.81 in 2017. The Company has a steady level of Inventory of around 32 days since 2017. Due to this reason, The Company has maintained its gross cash conversion cycle at 33.5 days since 2017.

The study has relived the five major approaches to effective control and review in the retail sector:

a. The exploitation of techniques of cash mobilization to reduce the operating requirement of cash.

b. Major efforts to increase the precision and reliability of cash forecasting.

c. Maximum efforts to define and quantify the quality reserve needs of the company.

d. The development of explicit alternative sources of liquidity.

e. The aggressive search for more productive uses for surplus money assets.

F. THE FUTURE OF WORKING CAPITAL MANAGEMENT IN THE ADVENT OF TECHNOLOGY AND THE FINTECH REVOLUTION:

The debate that has long raged over whether Enterprise Resource Planning (ERP) systems can compare on a function-by-function basis with specialized treasury management systems is about to get more intense. As companies look at ways to dig deeper into and reduce costs within, their working capital management processes, the systems they choose to do so become key.

Working capital optimization now requires an unprecedented level of visibility into all of the systems and information that make up the working capital cycle from receivables, payables, and inventory on the one hand to accounts, investments, and liquidity needs on the other. Data must flow regularly and quickly, and be modelled and reported in sophisticated ways.

As a result, companies are changing the way they look at technology and are increasingly seeing the advantage of dedicating more of their budget to upgrading treasury and finance technology to gain longer-term cost-cutting benefits.

ERP systems and other solutions used for working capital improvement all have strengths and weaknesses. Which solution will work best for the company be it using an ERP system alone, using an ERP in combination with effective Working Capital Management, using a smaller, specialized system focused on one or more elements of the process or simply using macros and a spreadsheet will depend on the individual company?

As the range of solutions grows, choosing the most appropriate one becomes more difficult. The company must look at what resources they are willing to put behind a working capital optimization program. Doing so will determine the next questions they must ask, how deeply they can dig into their existing processes and make changes, what their goals are in terms of reducing costs and increasing efficiency in the different stages of the working capital cycle, and how to achieve those goals.

Working capital, the lifeblood of businesses, is being transformed by financial technology. At a recent roundtable, a panel of experts from diverse areas talks about fintech innovations, with a specific focus on working capital. Whether the impact of fintech on working capital is an evolution or a revolution – panellists differed on this point – there was wide agreement that there is a powerful change underway.

G. KEY AREAS IN WHICH FINTECH IS ALREADY HAVING AN IMPACT ON WORKING CAPITAL:

According to market estimates, US$40 trillion is currently sitting in businesses' books of receivables on any given day. There is a lack of connection between those who have cash and those who need cash, mainly due to the untapped liquidity of those who have it. This is very true in import-export trade and B2B transactions.

Traditionally, intermediaries have tried to fill that void but had challenges, despite the best intentions, until now. The application of technology as it relates to working capital has the potential to improve visibility between trading partners to the point that the supplier's accounts receivable are the buyer's accounts payable. Such visibility has a de-risking effect, diminishing the role of the intermediary in the provision of working capital and allowing those with capital to connect directly with those who need capital more efficiently.

Emerging fintech firms can change and positively disrupt existing models. Working capital optimization is therefore an excellent opportunity for nimble fintech companies to firmly address the small-and-midsize- business market (i.e., companies that are typically on the lower side of credit rating and maybe aren't even rated at all).

The credit risk becomes extremely high, and forward-looking fintech players are finding ways to mitigate this risk by extracting more data and turning it into information for better risk profiling and predictive management. Innovative fintech firms measure their clients' (e.g.,buyers' or suppliers') operational performance (e.g., on-time deliveries, quality products, on-time payments) to establish a reliable risk profile of these companies. Fintech companies in the peer-to-peer lending space capture transactional history to determine cash inflow projections, cash outflows, procurement forecasts, and even credit underwriting. By gathering structured and unstructured data, they can build a risk profile and lend money to borrowers.

Corporate decision-makers use technology not only to automate tasks and reduce inefficiencies, as previously discussed but also to build information that supports decisions. The corporate treasurer is among the most information- hungry corporate parties. The treasurer's role is dramatically changing: Formerly pure operations (only looking at how much is in the bank today and tomorrow), the treasurer is now accountable for the company's working capital results.

The access to payables, receivables and inventory data allows the corporate treasurer to start evaluating which suppliers, customers, and logistics partners are strategic. Treasurers can then talk with the organization's procurement, sales, and logistics functions, gauging how much each of these functions impacts the company's prized assets and the group's risk management profile. Treasurers are the principal decision-makers over anything that touches their company's financial ecosystem.

i. FINTECH PLAYERS:
Fintech players must mitigate this risk of long-tail suppliers by extracting more data and turning it into information for better risk profiling and predictive management.
Instead of adopting a strategy of disintermediation to side-line banks providing working capital services, fintech companies must find adjacencies and clear areas of opportunity for both.

ii. CORPORATE USERS:
Corporate decision-makers must use technology not only to automate tasks and reduce inefficiencies but also to build information that supports decisions.
Treasurers must become the principal decision-makers over anything that touches their companies' financial ecosystems.

iii. BANKS:
Financial institutions must proactively take advantage and build business opportunities from nascent demand. Banks must let the innovators do what they do well, being very agile and quick to develop, while the banks themselves industrialize and take care of control, structure, access, and distribution. Banks should build out a tech sector within the fintech world, forming consortia, creating innovator labs, or investing and injecting equity.

Hence, it concluded Working capital has its important for the operational efficiency of the Company's success and growth, but, in the case of More Retail Limited, its management is quite important because the Company always lacks working capital.

The working capital investment and financing policies have the most significant impact on profitability, hence, policies are related to risk and return are the conservative policy to reduce both the risk and return and the aggressive one have the opposite impact on the Company's better future which may lead to reduce the present gap of the Company versus the Sector. Despite the positive aspect, the challenges that were encountered during the meeting comprised the severe limitation of the study due to the single sample size.

The More Retail Limited in year 2016 had shown a negative balance of shareholders' funds which was an adverse financial condition. Since then the successive equity infusion led to a positive number in terms of Shareholders funds. The infusion of the equity funds were utilised to reduce the long-term borrowings also to rationalized and reduces the current liabilities. The capital infusion was instrumental in shaping the balance to more lean form in terms of reduction in Long and Short Term liabilities.

However, the more Corrective steps from the company is expected in terms of cost control, better asset utilisation and developing new streams of revenues that may lead to a better prospectus and future for the Company Viz. More Retail Limited.

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Annexure – I: More Retail Limited - Balance Sheet from 2016 To 2019

Annexure - II More Retail Limited – P & L Statement from 2016 To 2019

Annexure – I

MORE RETAIL LIMITED - BALANCE SHEET FROM 2016 TO 2019

(Rs. In Crores)

PARTICULARS			MAR-19	MAR-18	MAR-17	MAR-16
EQUITY AND LIABILITIES	Shareholders' funds	Share capital	7,666.44	3,171.44	297.86	297.86
		Reserves and surplus	(7,562.05)	(7,062.49)	(6,618.04)	(5,969.60)
		Total	**104.39**	**(3,891.05)**	**(6,320.18)**	**(5,671.74)**
	Non-current liabilities	Long-term borrowings	324.19	2,506.77	4,846.78	4,401.18
		Other long-term liabilities	-	-	19.81	-
		Long-term provisions	8.74	7.84	8.26	6.75
		Total	**332.93**	**2,514.61**	**4,874.85**	**4,407.93**
	Current liabilities	Short-term borrowings	-	1,375.50	816.27	859.5
		Trade payables	289.02	240.83	-	-
		Due to micro and small enterprises	-	-	1.71	1.87
		Due to others	104.48	122.84	267.27	243.41
		Other current liabilities	97.64	434.1	1,241.33	1,021.65
		Short-term provisions	6.75	6.48	9.28	8.28
		Total	**497.89**	**2,179.75**	**2,335.86**	**2,134.71**
	Total		**935.21**	**803.31**	**890.53**	**870.9**
	Non-current assets	Fixed assets	0.44	3.06	-	-
		Tangible assets	159.37	166.48	158.61	150.33
		Intangible assets	19.96	16.01	8.98	9.21
		Capital work in progress	18.51	18.54	22.45	28.45
		Total	**198.28**	**204.09**	**190.04**	**187.99**
		Deferred tax assets (net)	11.17	6.89	-	-
		Non-current investments	28.04	28.04	3.67	3.67
		Long-term loans and advances	45.93	42.02	88.81	88.79
		Other non-current assets	5.38	6.73	1.24	4.76
		Total	**289.3**	**287.77**	**283.76**	**285.21**
	Current Assets	Inventories	368.6	312.79	336.98	328.18
		Trade receivables	19.85	14.93	20.61	21.65
		Cash and bank balances	126.97	49.51	52.58	118.45
		Short-term loans and advances	2.23	3.62	192.71	113.83
		Other current assets	128.26	134.69	3.89	3.58
		Total	**645.91**	**515.54**	**606.77**	**585.69**
		Total	**935.21**	**803.31**	**890.53**	**870.9**

Annexure – II

MORE RETAIL LIMITED – P & L STATEMENT FROM 2016 TO 2019

(Rs. In Crores)

PARTICULARS		MAR-19	MAR-18	MAR-17	MAR-16
INCOME :	Revenue from operations	4,257.78	4,053.59	4,193.56	3,509.37
	Other income	27.25	10.43	17.34	23.50
	Total income (I)	**4,285.03**	**4,064.02**	**4,210.90**	**3,532.87**
EXPENSES :	Purchases of traded goods	3,481.37	3,227.50	3,415.13	2,930.96
	Change in inventories of traded goods	(60.67)	8.51	(4.40)	(71.90)
	Employee benefits expense	399.85	380.66	373.54	315.28
	Finance costs	411.11	649.69	471.39	417.26
	Depreciation and amortisation	87.55	76.45	73.69	64.45
	Other expenses	464.76	455.91	522.77	510.45
	Total expenses (II)	**4,783.97**	**4,798.70**	**4,852.12**	**4,166.50**
	Loss before exceptional items and tax (I)-(II)	(498.94)	(734.70)	(641.22)	(633.63)
	Less : Exceptional items	(0.44)	(0.82)	2.92	15.79
	Loss before tax	(0.44)	4.32	(644.14)	(649.42)
	Tax expense	-	4.32	-	-
	Loss after tax	**(499.38)**	**(731.20)**	**(644.14)**	**(649.42)**
	Basic and Diluted Earnings Per Share	**(1.55)**	**(19.93)**	**(21.63)**	**(29.06)**

M-commerce: New Business Opportunities in the Jewellery Industry

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ABSTRACT

Mobile phones, or more accurately, smartphones, have revolutionized the diamond industry. To gain a competitive edge in India, diamond and jewelry producers, master diamond cutters, and graduate gemmologists specializing in diamonds are using M-commerce to deliver novel customer service choices to their clientele.

Electronic commerce, also known as E-commerce, has revolutionized the way people do business. Through electronic systems such as the Internet and other computer networks, traders may buy and sell goods from anywhere in the globe. Many Indian diamantaires and jewellery manufacturers adapted to this approach and profited as a result. Mobile commerce appears to be next on the agenda. M-commerce, or mobile commerce, is billed as the next generation of wireless Ecommerce that eliminates the need for wires and plug-in devices. Handheld gadgets such as mobile phones or Personal Digital Assistants can be used to undertake financial and promotional activities (PDAs).

Although not everyone will be interested in M-commerce in the next years, it is expected to develop significantly as more advanced wireless handheld accessories become available. Because it has a global customer, the Indian diamond sector is accepting it more quickly. To fully benefit from M-commerce, diamantaires and jewelry manufacturers should educate themselves on the subject so that they can have the necessary information and implement it in their businesses as needed.

Keywords: M-commerce, Advantages, Opportunities, Challenges of M-commerce, Security Issues, Business, Online Shopping, Diamantaires, and Jewelry Manufactures

Introduction

Mobile phones, or more accurately, smartphones, have revolutionized the diamond industry. To gain a competitive edge in India, diamond and jewelry producers, master diamond cutters, and graduate gemmologists specializing in diamonds are using M-commerce to deliver novel customer service choices to their clientele.

Electronic commerce, also known as E-commerce, has revolutionized the way people do business. Through electronic systems such as the Internet and other computer networks, traders may buy and sell goods from anywhere in the globe. Many Indian diamantaires and jewellery manufacturers adapted to this approach and profited as a result. Mobile commerce appears to be next on the agenda. M-commerce, or mobile commerce, is billed as the next generation of wireless Ecommerce that eliminates the need for wires and plug-in devices. Handheld gadgets such as mobile phones or Personal Digital Assistants can be used to undertake financial and promotional activities (PDAs).

Although not everyone will be interested in M-commerce in the next years, it is expected to develop significantly as more advanced wireless handheld accessories become available. Because it has a global customer, the Indian diamond sector is accepting it more quickly. To fully benefit from M-commerce, diamantaires and jewelry manufacturers should educate themselves on the subject so that they can have the necessary information and implement it in their businesses as needed.

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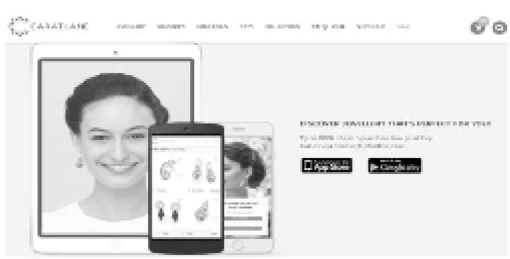


M-Commerce has a broader reach, lowers transaction costs, improves business operations, and provides competitive pricing. It's simple to use and may be customized. Through electronic systems such as the Internet and other computer networks, traders may buy and sell goods from anywhere in the globe. Diamond and jewellery apps are quickly gaining traction in the diamond market, as they simplify the process of selecting a diamond from a large selection of loose diamonds. Apps allow a convenient way to shop for and compare diamonds of all shapes, sizes, carats, clarity, and other specifications.

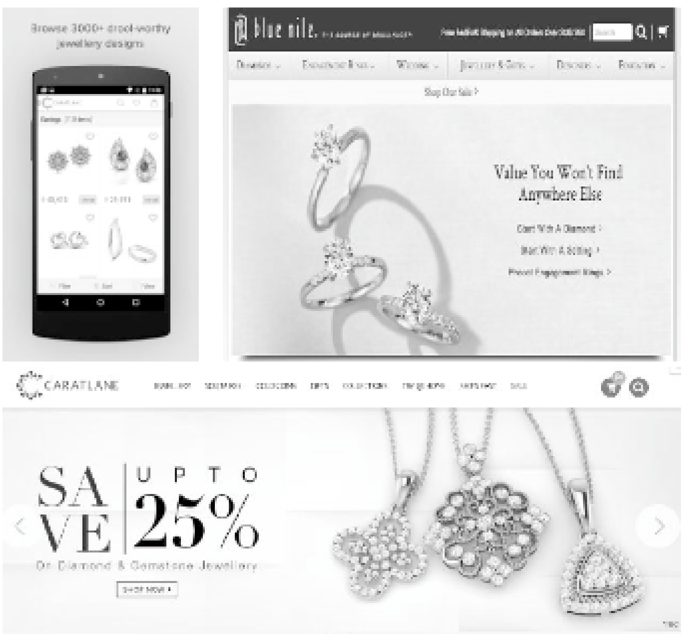
However, the lower screen sizes of mobile phones compared to desktop computers pose a problem for mobile commerce. Because of the smaller screen size, it's much more difficult to express all that would normally appear on the main site. The lengthy checkout process offered by most mobile sites is one of the primary barriers to M-Commerce adoption. Entering payment card information and delivery addresses can be a time-consuming and complicated process that requires a lot of zooming in and out to choose text fields and dates.

Everyone is familiar with Ecommerce, which refers to the ability to purchase goods without physically visiting a store. As a result, ecommerce has become a must for any business that wants to do well on the internet. Mobile phone firms are constantly inventing new smart phones. As a result, users can obtain all of their information from the internet on their mobile phones. These Ecommerce companies targeted these smart phone consumers through mobile websites and apps, and Mobile Commerce was born as a result of this.

Mobile Commerce Services

Mobile phones, often known as smartphones, have revolutionized the diamond industry. To gain a competitive edge in India, diamond and jewelry producers, master diamond cutters, and graduate gemologists specializing in diamonds are using M-commerce to deliver novel customer service choices to their clientele.

The fundamental distinction between M-commerce and Ecommerce is that M-commerce employs a wireless network to conduct financial transactions, services, and purchases. In other words, M-commerce provides convenience for all types of transactions, including b2b, b2c, and c2c. Because of its growing popularity, the corporate sector has been obliged to design a new commerce platform that can reach the masses and has distinctive characteristics. Customers nowadays like to not only look at diamonds and jewellery online or through mobile apps, but also to buy them right away. To reach a bigger consumer base, diamond merchants and jewelry manufacturers provide better prices, greater variety, foreign patterns or designs, third-party lab verification of all their items, and easier payment plans (such as EMI). Furthermore, because their operating costs are lower than those of a physical and mortar store, they offer customers attractive discounts and coupons.



CaratLane is India's first and largest online jewelry retailer. Since its inception in 2008, the company has raised $52 million in investment. BlueNile inspired one of the founders during his studies in California, and he came from family-owned traditional jewelry business.

Another Indian company, BlueStone, noticed the opportunity and opened the digital gates for jewelry shoppers in 2011. They've raised $31 million since then to keep up with their quick expansion.

Chairman of the Tata Group, which encompasses a wide range of services and goods, including Tanishq, India's largest jewelry brand. This demonstrates that conventional jewelry businesses are paying attention to online business changes in the jewelry industry.

A clear differentiator from traditional jewelry shops

As previously stated, India is the world's largest purchaser of gold and diamond jewelry in terms of volume. Traditional jewelry shops can be found in abundance on the streets of Bangalore, Delhi, or any other city.

To set themselves apart from other jewelry stores or showrooms, Caratlane and Bluestone provide easy-to-access online education on how to choose the perfect gemstone and precious metal. This fits with the general trend of consumers preferring to educate themselves through internet resources rather than relying on information from salespeople in a store.

Caratlane and Bluestone are also distinguished from traditional jewelers by the fact that all of the diamonds and solitaires they offer come with trust certificates. Surprisingly, this was not common practice in India's conventional jewelry industry, and Caratlane and Bluestone stood to benefit greatly from the trust certifications' introduction. As a result, online jewelry is less expensive than traditional jewelry while maintaining the same level of quality. Less expensive costs are possible due to the company's concept.

Buying a piece of jewelry for thousands of dollars online can always create doubts in the minds of buyers. Caratlane and Bluestone, on the other hand, provide all available assurances that everything will be OK, such as cash-on-delivery choices.

Shoppers' concerns are sometimes not about a lack of faith in an online store, but rather about being able to foresee whether or not something would fit them in terms of size and style. This is why they implemented a Sample at Home policy, allowing customers to select things to try in the comfort of their own homes before placing an order. Both companies also offer a 30-day exchange policy. In August 2015, Caratlane also launched a Virtual Try-On app, which works like a mirror and projects a real-time 3D image of a fashion item onto your body. So, to locate the perfect pair of earrings, customers must first gain inspiration by exploring the items in a traditional or internet store.

Of course, the technology needed special tweaking to accommodate the jewelry vertical, when encountering this market need we fine-tuned our machine learning algorithms to be able to look into types and colors of gems, specific jewelry designs,etc.

It believes that most offline businesses will turn into online counterparts, and jewellery M-commerce shows signs that are here to stay and shine bright. India is definitely a market to keep an eye on for everyone interested in how this trend is going to turn.

Objectives:

- Identifying the utility of M-Commerce Applications in the context of Indian Diamantaires and Jewellery Manufacturers is one of the study's goals.
- To learn about the opportunities and challenges of M-commerce in the jewelry business, as well as the interaction between M-commerce and E-commerce.
- To discuss the current E-commerce and M-commerce opportunities and challenges in the gems and jewelry industry.
- To investigate the security issues associated with online selling via M-commerce**.**

Hypothesis:

H1 = There is a substantial link between M-commerce reliability and consumer purchasing decisions.

H2 = Whether through E-commerce or M-commerce, there is no noticeable effect on jewelry sales.

H3 = There is no substantial association between educational attainment and Internet usage.

H4 = In India, consumers prefer to purchase jewelry from traditional jewelers rather than via E-commerce or M-commerce.

Research methodology:

This M-Commerce is advantageous to both large and small enterprises. With the expanding number of mobile users, M-Commerce provides your business with a big and growing marketplace for a diverse range of goods and services.

To justify the necessity for research, a review of current literature in the field was undertaken, keeping in mind the study's aims. As a result, research gaps were identified, and a questionnaire-based study on the aspects of M-commerce was conducted. The extent of the Impact of Mobile Commerce on key Business Value components was ranked by jewelers and diamond dealers. We have a sample size of 100 diamantaires and jewelry producers at the moment.

Findings:

On the basis of analysis following results are made on diamantaires and jewellery manufacturers to know the impact of Mobile Commerce on Business Value.

M-commerce awareness: It is estimated that 70% of Diamantaires and jewellers are aware of the benefits of M-commerce, and they have been developing mobile applications (apps) to meet their needs. It is unknown to 30% of the population. Since using a computer to access the Internet is virtually obsolete, diamond and jewellery mobile apps combine the power of the Internet by improving the efficiency of real-time loose diamond inventory searches. Mobile websites are more secure for buying jewelry, according to 55 percent, and mobile applications are the most crucial and time-saving route for 20 percent, although 25 percent highly suggest buying from a showroom. However, you will have to travel more to do so. That will take up more of your time, gasoline, and energy, as well as cost you more money. 60 percent Jewellers, a diamond maker, has released a mobile app for Blackberry, iPhone, and iPad.

Dimexon Another diamond manufacturer Rosy Blue launched its BlackBerry application which ensures that its diamonds are available to all its customers at a click of a button on their Advantage BlackBerry

Opportunities of Mobile Commerce: According to data 75% jewellers were satisfied with M-commerce apps and its impact on business as it Cover wild distance between customers Mobile is the only technology which is now become necessary for any person in social and business life than computers. So, it is easy to reach users through M-Commerce. 25% were dissatisfied as the changes in technology waste their investment in m-commerce apps.

Savings: 90% Companies try to reach to the consumer directly through M-Commerce, so consumers have no need to go far to the store physically and at the end it saves user's time and money. There is no need of skilled consumer. Buyers can have look thousands of items on their cell phones and there is no need of online checkout process

Challenges: Smartphone limitation: 40% of traders said that sale through showroom is good because there Is a challenge with mobile commerce is the smaller screen sizes of mobiles compared to a desktop computer or laptops, so sometimes users tired to navigate more and more to choose just one item from thousands. It affects shopping rates.

Connectivity: Moblie commerce needs high-speed connectivity of 3G. Otherwise, it becomes hectic for the user to go through the entire product purchase process.

Awareness and Habituate: Every new technology has some issues in its early stages. Because M-Commerce is a new application, clients may be unaware of or averse to changes that occur frequently. Some clients are accustomed to purchasing things through the internet. As a result, they do not engage in M commerce shopping.

As much as 90% of M-Commerce retailers reach out to customers by offering different and better bargains and offers than their competitors. 10% of M-Commerce merchants believe in brand loyalty.

Risk factor: Each company faces its own set of risks. Mobile commerce is a booming industry, according to 80 percent of respondents, however, 20 percent believe that a lot of investment in this field is unsafe. Because technology evolves daily. Furthermore, because wireless networks have less protection, the risks of data transmission hacking are higher.

Complex process: 80% of consumers ore accepted that entering credit details and shipping addresses involving a lot of zooming in and out to select text fields and dates can be a very time-consuming and complex process 20% of consumers are comfortable with its connectivity.

Security: One of the most significant impediments to e-commerce implementation, according to 60% of respondents, is a lack of security. When account data and other personal information move across networks, security is a critical issue that concerns the usage of mobile technology in financial services.

Conclusion

M-Commerce has a greater reach, lowers transaction costs, improves business operations, and provides competitive pricing. It's simple to use and may be customized. Traders could buy and sell items from any location on the planet. Diamond apps are quickly gaining traction in the diamond market, as they simplify the process of selecting a diamond from a large selection of loose diamonds. Apps offer a convenient way to shop for and compare diamonds of all shapes, sizes, carats, clarity, and other specifications. App shopping stores are available 24 hours a day, seven days a week, and 365 days a year. Traditional retail stores that are open 24 hours a day, seven days a week are quite unusual. You have the opportunity to purchase at your own pace and convenience thanks to the availability of online businesses. From time to time, jewelry boutiques close their doors. They don't waste time waiting for anything.

Mobile commerce is a new aspect of consumerism and a much more powerful way to communicate with customers. Although, most of people do not shop with their phones in the same way they shop with PCs. Every new technology has some problem at the starting phase. Here M Commerce is a new application, so sometimes people avoid to change which are rapidly change as they are habituate to buy products from jewellery shops or showrooms and buying jewellery online often takes away personal touch. On the other hand the picture displayed on the website is so flashy and beautiful that it is often misleading. The actual product might not be that good to wear. Shortly most offline businesses will turn into online counterpart and this mobile commerce opens the new era of shopping, but it depends on city and location-independent level, demographic, education lever and income level are mostly web-first businesses that are naturally adapting to the mobile world.

In order to stand out from jewellery shops or showrooms, Caratlane and Bluestone offer their customers easily accessible online education about how to choose the right gemstone and precious metal. This plays along the general trend of consumers willing to self-inform themselves from online resources.

Future Prospect

No doubt mobile commerce needs some development in specific area like secure transaction, better shopping experience and enhanced graphics. Other than this mobile commerce opens new era of shopping.

Suggestions

There should be taken necessary steps towards the security of M-commerce applications by the Government of India. Fear of hacking and attack by viruses to the device is commonly seen in the user. Even while doing some transaction users lost their money and get nothing. So, strong security system should be developed by the sellers. And should aware more and more peoples about the uses and security of M-commerce applications and government should take necessary action for improvement of internet connectivity and affordability of mobile devices and easy payment mode.

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Emerging Trends in Online Jewellery Retail

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ABSTRACT

Online jewellery retailing has caught on in India as E-Commerce has passed its inflexion point in India. Although most of us like to shop jewellery in-store due to the impact of COVID 19, the pandemic emphasized the importance of the digital presence of jewellery stores. Before the pandemic, the website of the jewellers are not on top priority and focus on their physical stores.

Gold jewellery, diamonds, and other valuable stones were once only purchased from the trusted family jeweller. The trend is shifting now, with more consumers willing to buy jewellery online. In India, online jewellery retail is still in its infancy. India has never been more welcoming to internet jewellery purchases than it is now. These days, the usage of online media is gaining traction, and the jewellery retail business is taking advantage of it for promotion and brand growth. Online selling allows businesses to operate 24 hours a day, seven days a week, and over long periods. The appeal of online jewellery portals among discriminating young people is fuelled by interesting wearable designs, low base price points, the availability of 14, 18, or 22-carat gold, as well as a selection of diamond qualities, to pick from. There's also a try-before-you-buy option, as well as a quality guarantee and potential buyback. Thus the objective of this study is an attempt to help Traditional jewellery retailers further boost their sales through online retailing.

Keywords: Online Jewellery, M-commerce, Security Issues, Diamantaires and Jewelry Manufactures

Introduction

Jewellery buying and retailing in India goes back to centuries where the rich used to wear jewellery customized jewellery and the poor purchases in bits and pieces as savings and in both cases these jewellery pieces became family. These jewellery items got passed from one generation to another. It is established that jewellery was bought to look and feel better for oneself, it was also bought by the men to make their loved ones look and feel better, and to feel more possessed and of course more powerful. The number of jewellers is rising, competition is increasing. Retailers who wish to stay competitive need to be innovative not only in designs but also in promotion and selling. Consumer expectations are rising, and they want more than simply the finest selections; they want an enjoyable shopping experience.

Online jewellery retail in India is at a developing stage. Jewellery e-tailing is a different ball game Jewellery is a high involvement product category. The look and feel of the product are very important in a purchase decision. The major players in the online precious jewellery market are Caratlane, Blue Stone, Amazon, Flipkart and Velvet case. While Caratlane and Bluestone sell only their jewellery all other players are aggregators or marketplaces. In addition to the above many individual jewellers and chain stores sell jewellery online. However, their contribution to the total market is negligible.

High-quality images of the product on a model showing how it looks when worn and specifications are essential for the customer to get a real feel of the product. Selling jewellery online is difficult and hence far more complicated than selling electronics. Online retailing gives the advantage to run the business in 24/7model & across time horizons. Interesting wearable designs, low base price points, the choice between 14, 18 and 22carat gold, besides a range of diamond quality to pick from boost the interest in online jewellery portals popular among discerning youngsters. Additionally, the try before you buy offer besides the assurance on quality and buyback in the future seems to instil increased interest in this format of buying.

Review of literature

(Saha) conducted a study to know "the impact of the increasing trend of online shopping over the various fixed shop retailers". The research reveals that price, shopping convenience and range of products are major driving factors for consumers to shop online.

Two broad categories of OSE under seven drivers and five distinct behavioural outcomes of OSE emerged from the study. The two categories of OSE drivers, though unique, widely fit into the existing frameworks of OSE. The study also indicates that shoppers seize other shoppers reviews as a suitable platform to engage in a wide range of behaviours identified two categories of Online shopping experience (OSE) -drivers and behavioural outcomes. The study also indicates that shoppers seize other shoppers' reviews as a suitable platform to engage in a wide range of behaviours. Online retailing in India is moving from consumer durables and apparel to groceries and e-retailing to m-retailing .

(Mahajan) in his study entitled "A Study of E-retailing: Analysing the Factors and Perceptions of Indian Millennials for Online Retailers" identified website design and response, service provided by the online retailer security and confidentiality of data are major factors responsible for the selection of online retailer.

Research Methodology

Primary data have been collected through Personal Interviews of various jewellers of Jaipur city in October – November 2020. Due to the impact of COVID 19, Personal Interviews were conducted online using the Google meet platform. In total 30 jewellers were interviewed for the study. Jewellers have been selected based on convenient sampling for the research.

Key Findings

Consumers are becoming more comfortable buying jewellery online, and they are considerably more likely to make high-ticket purchases online than they were five years ago.

Considering the rapidly expanding online jewellery market most of the jewellers were found open to modern online technologies. Most of them are using an online shopping system

Social commerce

Jewellers are also using Social networking sites like Facebook, Instagram, WhatsApp to promote their products. As social network sites are becoming more and more popular, online sales are also increasing.

They are also using the internet, social media, handheld devices for data capture to focus on the segment searching for the type of jewellery they sell.Try before buying options given by various online websites also encourage jewellery buyers to shop online. As the touch and feel before buying tendency are also satisfied through this option given by jewellers.

Technology Adoption

Chatbots, video selling, picture search, shared carts, facial recognition payments, and image/voice search technologies are all examples of technological breakthroughs in online purchasing. Product recommendation engines and virtual assistants benefit from artificial intelligence (AI), machine learning (ML), and artificial intelligence (AI). Both in-store and online, virtual reality (VR) allows for an immersive shopping experience. Additionally, blockchain technology provides data security while lowering transaction costs. To increase targeted marketing to consumers, online players must incorporate new technologies such as virtual reality and augmented reality. Chatbots and video sales are both excellent methods of product promotion. Suppliers should hire third-party expertise to model their items in 3D.

The online shopping experience has been improved thanks to modern technology. Many techniques, such as 360-degree photography and zoom lenses, allow internet shoppers to examine jewellery objects from every perspective. Customers will have an experience that is more similar to what they would have in a physical store if you provide a full 360-degree view of your merchandise.Virtual showrooms allow jewellers to deliver personalised consultations and present their products to potential customers in real-time.

Virtual mirrors and try-on stations are becoming increasingly popular. Customers can build their profiles and access them from anywhere, allowing them to compare products before making a purchase.

Digital Payments-Payments over the Internet

Due to a lack of confidence and security concerns with internet payments, cash payments have traditionally been the most favoured method of payment in India. However, with a large young population having access to smartphones, digital payments are on the rise, and by 2025, they are predicted to account for 80% of all transactions in India. "The Indian market has been adopting digital wallets quicker than the US, the UK, and China," according to ASSOCHAM (The Associated Chambers of Commerce and Industry). In India, improved payment infrastructure and telecommunications have aided the use of digital wallets. Online purchases will be encouraged if easy financing solutions are available, such as secure payment gateways, eWallet payments, EMIs, and cash on delivery.

Subscription Services

Services for Subscription-Loyalty programmes have been launched by online platforms such as Flipkart and Amazon, which offer points that can be exchanged for cash on future purchases. Amazon's Prime subscriptions, which are available on a monthly or annual basis, enhance the consumer experience by providing benefits such as priority for new product launches, fast and free shipping, and more.

Subscription services in online retailing encompass a wide range of appliances, as well as strategies for establishing a devoted client base, such as contests, forums, social media involvement, and intelligent material on portals.

Omnichannel Strategy

When it comes to buying jewellery, consumers are following the "research online, buy offline" trend, which involves comparing prices online and reading user reviews before physically visiting the store to purchase the item. Also, for certain other products where high internet discounts are offered, buyers follow the "research offline, purchase online" trend by looking over product details in open stores and ordering online. Companies should look at implementing a multi-channel strategy. New business methods, such as "brick-and-click," can help you gain clients while keeping things simple.

Shortly, omnichannel convergence will become unavoidable, allowing OEMs to turn consumer encounters into sales. Models such as "web-to-store" and "brick-and-click" will become increasingly common. More retailers are projected to build their exclusive web stores as the "research online, purchase offline" and "research offline, buy online" trends gain traction.Lightweight jewellery has become more popular as a result of online shopping. Consumers who want to buy heavy jewellery should go to a physical store to see how comfortable it is.Wallets, debit and credit cards, EMIs, and COD were among the payment options available, making jewellery purchasing stress-free and joyful.

Customers from tier II and III cities can now shop for jewellery at high-end boutiques and companies with locations in big cities. Online jewellery stores have an impact on offline sales as well. Consumers prefer to browse jewellers' online stores before visiting a store to learn about the current trends, designs, and variety offered. The trend of smart jewellery is also on the rise when a piece of jewellery technology keeps you linked while you're out and about.

Conclusion

These days, the usage of online media is gaining traction, and the jewellery retail business is taking advantage of it for promotion and brand growth. The rise of online shopping has been aided by a thriving economy and rising disposable incomes. The best and easiest approach to find what a customer wants is to buy online. The internet has become an attractive choice for selling jewellery, with a higher number of adolescents accessing the internet and broader broadband penetration across towns and cities.

Many brands are attempting to ride the e-commerce wave, but in the case of jewellery e-commerce, the notion of choice, trust, and service wins the game. This category is difficult to master in the online game. Given that the majority of Indians prefer to touch, feel, and try products before making low-cost purchases, there are several challenges that internet retailers must overcome. There are trust concerns. Customers need to feel important, and the environment and shopping experience should be at a high level of comfort and uniqueness. This will enable them to build trust in the brand. As far as the technical terms of the industry are concerned, it's not just about selling jewellery, but about selling experiences. For online sales in India, one should not focus only on selling products, but also on differentiators that extend beyond just products. Companies should provide easy and safe financing options for online purchases through secure payment gateways, payment through eWallets, EMIs, and cash on delivery, which will encourage online purchases. Companies must focus on targeted and personalized digital and social media marketing to acquire new and repeat customers. This is done by integrating the seller's mobile application with the consumer's social media profile.

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Management of Solid Waste from Jaipur City; Seasonal Variation of City Waste Corporation and Features

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ABSTRACT

Solid waste management is one of Jaipur's major environmental concerns. Solid waste creation in cities is increasing as a result of exponential urbanization, industrialization, and population growth. Solid waste neglect can have negative environmental consequences, pose a public health concern, and cause other socioeconomic issues. This document summarises the current state of concerned authorities' initiatives and researchers' efforts to identify more areas for improvement.

Keywords: Solid Waste, Environmental Concerns, Municipal Waste Management

1. Introduction

Human activities generate garbage, which is then managed, stored, collected, and disposed of, posing environmental and public health problems (Saxena et al., 2010). Economic development, urbanization, and increased living standards all contribute to a rise in the quantity and complexity of solid waste generated in cities (Gidde et al., 2008). Domestic, commercial, industrial (due to building and demolition), agricultural, institutional, and other solid wastes are all examples of solid waste. The term "municipal solid waste" refers to a mixture of residential and commercial waste generated by the general public (Rajkumar et al., 2010).

Degradable (paper, textiles, food waste, straw, and yard waste), partially degradable (wood, disposable napkins, and sludge), and non-degradable materials (leather, plastics, rubbers, metals, glass, ash from fuel-burning like coal, briquettes, or woods, dust, and electronic waste) make up the majority of municipal solid waste in Jaipur (Jhaet al., 2011). Rapid industrialization and population growth in India have prompted people to migrate from rural to cities, resulting in the generation of hundreds of tonnes of MSW per day. Waste has become one of the pollution sources as a result of poor solid waste management, resulting in a variety of environmental repercussions as well as risks to human health and safety (Shazwin and Nakagoshi, 2010). Jaipur is one of India's least urbanized cities. Due to their high occupancy, metropolitan cities account for more than 42 percent of India's urban population (Ghosh and Kansal, 2014). They are also India's top generator of MSW. Waste has become one of the pollution sources as a result of poor solid waste management, resulting in a variety of environmental repercussions as well as risks to human health and safety (Shazwin and Nakagoshi, 2010). Jaipur is one of India's least urbanized cities. Due to their high occupancy, metropolitan cities account for more than 42 percent of India's urban population (Ghosh and Kansal, 2014). They are also India's top generator of MSW. The most important issues limiting improvements in SWM, according to a review of literature on SWM in India (Hanrahan et al., 2006), are institutional/financial issues. "There is an urgent need for much improved medium-term planning at the municipal and state level so that realistic investment projections can be developed and implemented," they write.

2. Qualitative and quantitative analysis of MSW

The amount of MSW generated is determined by a variety of factors, including eating patterns, living standards, commercial activities, and seasons. Data on production quantity and variance can help with collection and disposal system planning. Indian cities today create eight times more MSW than they did in 1947, thanks to increased urbanization and changing lifestyles.

The amount of waste produced and the types of garbage produced have changed in tandem with Jaipur's development. The population of Jaipur is currently 3,812,262. There was a time when the needs of the people of Jaipur were relatively limited, and the majority of the wastes were cow and human faeces. In 2011, the city of Jaipur disposed of 1100 MT of waste every day. According to BVG India Ltd, the daily rubbish output from Jaipur city in 2018 was 1700 MT/day, which increased to 1800 MT/day in 2019. By 2021, it is anticipated that the city's garbage will reach 3643 MT/day CDP, Draft City Development Plan, Jaipur, 2005. Table 1 shows a qualitative and quantitative overview of MSW in Jaipur.

3. Population growth rate and weather-wise tonnage details of MSW Jaipur.

Since 1971, the population of Jaipur has been increasing at varied rates. Between 1951 and 2001, there was a significant increase in the number of women in the workforce. According to census reports, the city's population has increased by 5 times. In the previous 50 years, the population of Jaipur has expanded by more than tenfold. The population of the city was only 1.6 lakh in 1900. The population of the Jaipur Municipal Corporation increased from 23.22 lakh in 2001 to 30.46 lakh in 2011. It is regarded as one of the country's fastest-growing cities. In 2011, it grew at a pace of 2.38 percent on average. The yearly average population growth rate from 1971 to 1981 was 2.69 percent in 1981, but it dropped drastically to 10.86 percent in 2001 and 2011. There are 909 females per 1000 males in the city. The population of the city is growing at a pace of 2% per year.

(a) The population density in Jaipur.

The density of a population is an important metric for analyzing population distribution. The population density of Jaipur city is 6523 people per square kilometer, which is much higher than the population density of 1981 (2624 people per square kilometer). The population density of the walled city area is 42008 people per square kilometer in 2013, down from 16201 people per square kilometer in 1981. In 2001, the walled city's total area was 6.7 square kilometers (2.32 percent of JMC's total area). Although density has decreased from 1991 to 2013, this is the case. The population density of the JMC area as a whole over time. The rest of the JMC area has a low population density, as can be seen. However, in 2011 it was significantly higher than in 2010. In 2001, the population density of JMC was 5027 people per square kilometer, which increased by 1566 people per square kilometer to 6593 people per square kilometer in 2011.The population of Jaipur in 2018 is 36.28 lakhs. The fact is the last census of Jaipur was done only in 2011 and the next such census would be in 2021. But as per estimate and projection, the population of Jaipur in 2019 is 40 lakhs.

(b) Municipal solid waste, sessional variations.

The amount of municipal solid waste (MSW) generated by a town varies depending on a variety of factors such as people's habits, living standards, location, and climate conditions. The variance in the parameter in India is extremely vast, so the quantity and quantity estimation for a city or state cannot easily be extended to other areas to design an appropriate MSW management strategy. The estimation for the same city may vary depending on the season of the year and the month. MSW management consumes a significant percentage of a municipality's budget to ensure the safe and sanitary disposal of MSW. Municipal solid waste is collected in vehicles or community bins and transported to the final disposal point at various locations across the township, depending on the convenience of households and municipal officials. Those community dumpsters are common in third-world countries. Also, community bins are left open at the top, exposing them to the elements. The content and quantity of MSW were created to serve as the foundation for planning, designing, and operating the management system. When compared to MSW in Western countries, MSW in India has a very different composition and is far more hazardous. The composition characteristics and quantity generally MSW from a township is a function of several parameters like food habit, season, the living standard of people, commercial activities in the region, etc. To device an effective management strategy for such waste it is important to study the general composition of the MSW generated as well as the variation in composition and characteristics concerning the individual location, in one group of different localities and seasons of the year.

(c) Analysis of MSW sample for composition and characteristics.

The mixed sample waste was physically analyzed for its composition, which included biodegradable paper, plastic, glass, metals, and inerts (dust, stone pieces, and others), and was expressed as a percentage of the total sample weight. Other MSW characteristics were determined, including moisture content, calorific value, bulk density, dry density, and waste generated per capita. The MSW was analyzed according to normal techniques.

(d) Physical certify of MSW

MSW samples collected from community bins were thoroughly mixed to create a composition sample for a specific location, and horrifying was performed to separate different types of MSW in general, including biodegradable (food waste, organic waste, etc.), paper, plastic, glass, metals, and inerts (dust, stone pieces, and others). The weight of each ingredient was calculated, and its portion was expressed as a percentage (percent) of the overall Wt weight of MSW.

The composition and qualities of the trash created by the community have a significant impact on municipal solid waste management. Seasons, living standards, geography, and other factors all influence the composition and characteristics of garbage. To visualize the true scenario, a change in the quantity and quality of MSW created by the community was also examined.

(e) Determination of Bulk density.

The empty weight and volume of a metallic cubicle measuring 45cm*45cm*45cm were measured. The sample was placed in a measuring cube and the net weight was collected to determine the bulk density. By dividing the weight of the sample by the capacity of the container containing the sample, the bulk density was calculated.

(f) Composition of MSW in Different seasons.

Summer season: - The average MSW composition throughout the summer. The average biodegradable fraction composition for the summer season was 45.90 percent, paper 4.05 percent, plastic 5.08 percent, glass 0.62 percent, metals 0.06 percent, textiles and leather 0.89 percent, and inert materials 44.5 percent.The average composition of MSW during the wet season. The biodegradable percentage is determined to be 39.60 percent, paper 4.83 percent, plastic 3.37 percent, glass 0.15 percent, metals 0.11 percent, textiles, and leather 0.64 percent, and inert materials 52.99 percent during the rainy season.

The average composition of MSW throughout the winter season. The average composition of a biodegradable fraction is 52.98 percent, paper 4.444 percent, plastic 5.07 percent, glass 0.69 percent, metals 0.15 percent, and inert materials 36.15 percent for the winter season.

Comparison of Characteristics of MSW in Different seasons.

Sr. No	Weather Wise	Total tonnage	Package-I			Package-II		Package-III		
			VD ZONE	AMER	HMW	CLZ	MNZ	HME	SNZ	MD ZONE
1	Mansoon (Rainy Season) (June-Sept 2017)	103497.29	24250.08	7711.00	13527.21	20871.53	16362.88	3230.05	3811.85	13732.70

2	Autumn (Oct-Nov 2017)	96914.69	20109.30	5736.11	872.23	17806.15	14295.54	6763.46	8983.28	14438.64
3	Winter (Dec2017-Feb 2018)	179379.84	32752.71	8990.86	12253.17	32157.38	21785.80	17757.61	26952.83	26729.50
4	Summer (Mar-May 2018)	189824.80	35157.13	8478.99	9027.78	36274.40	26136.73	17519.57	32437.97	24792.23
	Mansoon (June-Sept 2018)								33843.	32415.6
6	Autumn (Oct-Nov2018)	114832.41	27269.21	3899.30	5807.87	23828.23	17583.17	10318.36	13524.10	12602.18
7	Winter (Dec 2018-Feb 2019)	148955.33	34799.52	5782.05	6699.88	29669.18	19984.59	14320.23	20317.80	17382.11
8	Summer (Mar-May 2019)	143204.060	31815.730	5156.445	7243.930	29247.475	16843.190	15167.385	20875.640	16854.265
9	Mansoon (Rainy season) (June-July 2019)	94936.940	20545.200	3622.240	5147.050	22369.295	10704.515	9260.265	14490.505	8797.870
	Gross Total	**1313899.088**	**276368.919**	**57752.726**	**81881.622**	**262856.772**	**176488.937**	**115567.654**	**175237.335**	**167745.123**

The different characteristics of MSW in different seasons, as well as the yearly average of these characteristics, are compared that the total variation of moisture content was observed to be, 124%, itwas lowest in the summer season (21.34%) and highest in the rainy season (47.87%). Variation in calorific value of MSW and was observed to be varying from 560 Cal/kg in the rainy season (lowest) to 974 Cal/kg in summer season (highest). A total variation of 73.9% was observed in the value of calorific values. That the bulk density of MSW was 0.31% gm/cc in summer (lowest) and 0.38 gm/cc in rainy season (highest), a total variation of 22.5% was observed. The variation of dry density of MSW and was found to vary in a narrow range 0.25% gm/cc in summer to 0.26 gm/cc in rainy and winter season, a total variation of the per capital MSW generation in different season and was observed 0.31 kg/day in rainy season to 0.45 kg/day in summer season, a total variation of 45.16% was observed. The variation in characteristics of MSW with respect to different season are found to be significant for most of the parameters studied.

4. MSW characteristics and composition

The composition of MSW in the production sources and in the collection points was determined on the basis of composition wet weight and consists mainly of a large organic fraction (40-60%), ash and fine earth (30-40%), paper (3-6%) and plastics, glass and metals (each less than 1%). According to data of the year 2015-16, the physical characteristics of the MSW in Jaipur city are shown in table 1Out of the waste generated in the city of Jaipur, 60% of the biowaste which comes out of the kitchen, 15% dust and 25% of the garbage can be recyclable.

5. Storage and collection of MSW

The collection of municipal solid waste is the responsibility of the companies/municipalities. Municipal garbage containers placed in various places along the roads, which sometimes lead to the creation of unauthorized open collection points. Efforts to organize door- to-door collection begin only in many megacities such as Delhi, Mumbai, Bangalore, Madras and Hyderabad with the help of NGOs. It has been observed that many municipalities have used private contractors for secondary transport from communal warehouses or collection points to disposal sites. welfare associations in specific monthly payments organize collection in certain urban areas. A sweeper that sweeps the raids manually is assigned a specific area (around 250 m2). The sweepers place the waste from the road in a wheelbarrow and then transfer the waste to garbage cans or collection points.

Numerous studies of the urban environment have shown that the efficiency of MSW collection depends on two main factors: labor availability and transport capacity. Most cities cannot provide waste collection services in all parts of the city. In general, low-income, overcrowded institutions do not have municipal solid waste collection and disposal services. The reason is that these settlements are often illegal and that locals do not want or cannot pay for services. They throw rubbish near or around their homes at different times, which make collecting and transporting waste very difficult in these areas. The central pollution control board (CPCB) has collected data for the 299 class I cities to determine how municipal solid waste is collected. It has been found that manual collection comprises 50%, while collection with trucks comprises only 49% (CPCB, 2000).

Today, the municipal corporation of Jaipur is divided into 8 zones for the purpose of collection and storage of wastes. The zonal commissioner is responsible for the cleanliness of each zone, whose Sanitary Inspector, health officer and a chief sanitary inspector assist. With the cleaning point, these 8 zones again divided into 91 wards. In each ward, the responsibility of cleaning is done by the sanitory inspector, who provides the Jamadar, supervisor and sanitary worker support related to that ward. The cleaning work in Jaipur Municipal Corporation is based on three-tier system. Sweeping, Door to Door garbage collection and nallia cleaning. For garbage collection fixed containers have never been installed in the city by the Jaipur municipal corporation; it always mobile containers have been used.

6. Transfer and transport of MSW

The transfer stations (except in some cases such as Madras, Mumbai, Delhi, Ahmadabad and Calcutta) are not used, and the same vehicle, which collects waste from individual containers, sends them to the treatment or disposal site. Municipal solid waste collected in garbage cans and collection points is transported to treatment or disposal sites using a variety of vehicles. The vehicles used to transport MSW are generally open-body type and generally remain uncovered; therefore, during transport, the waste tends to spread on the road, which results in unhygienic hygiene conditions. In some cities, modern hydraulic vehicles are being introduced gradually.

Collection and transportation activities account for approximately 80-95% of MSWM's total budget; therefore, it is a key element in determining the economy of the entire MSWM system. Three areas have been selected out of the city for disposal of garbage by the Jaipur municipal corporation it is Mathuradaspura, Sevapura, Langariyawas. There are three places where the garbage of the whole city is brought in. the total area of these three is 859 bigha. The distance from the city of these three areas is 17 km, 20 km, 21 km. The average amount of garbage brought from the city of Jaipur in Mathuradaspura is 700-800 MT/day, Sevapura 250-300 MT/day, Langariyawas 350-450 MT/day.

7. MSW disposals and treatment

• Composting

Composting is an organic material that has been broken down and recycled as a fertilizer and soil amendment

Langariyawas:- Here the waste is converted into RDF, which is used as a fuel in cement factories.

Sevapura:- The plant to build compost fertilizer capacity of 250 MT garbage. Apart from this, the garbage that is left is untouched, which pollutes the environment there.

• Landfill

The landfill is the oldest and most common method of treating solid waste.

Mathuradaspura:- Is used as an open dumping ground for non-segregated municipal solid waste about 800 tons of municipal waste is dumped here every day.

8. Conclusion

Biodegradable materials account up 45.92 % of MSW in Jaipur, followed by paper 4.38 %, plastic 4.45 %, glass 0.48 %, metals 0.11 %, textiles and leather 0.90 %, and inert materials 43.93 %. The MSW of Jaipur city varies by 124 % in moisture content, 73.9 % in calorific value, 22.5 % in bulk density, 4% in dry density, and 45.16 % in trash creation per person per day depending on the season. The seasonal fluctuation in MSW characteristics was discovered to range from 4-124 percent. As a result, none of the MSW management methods (i.e., land dumping, composting, recycling and recovery, burning, and energy generation) can be sufficient for efficient MSW management. Because different seasons have varying weights of solid waste, seasonal variation in MSW features also gives an idea regarding arrangements to be made for the collection, transportation, and change in tonnage ratio of solid waste estimation. The seasonal variation in characteristics of MSW also gives an idea about arrangements to be made for the collection, transportation, change in tonnage ratio of solid waste estimation because the different season has a different weight of solid waste Of MSW and disposal of different quality of MSW generated in different season.

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Capital Structure and Firm Performance: Evidence from India

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ABSTRACT

The review paper aim is to identify the status of existing studies conducted on capital structure and firm performance in the previous years. Furthermore, the study emphasises the gaps in the literature on capital structure and firm performance and also aim to identify scope of future research in this field. For this purpose, a systematic literature review is performed, wherein; literature ranging from theories of capital structure to studies in the area of capital structure and firm performance was reviewed. The outcomes of the study asserted that the relationship between the companies' performance and the financial leverage is mixed, inconsistent and varied. Also, it was found that the influence of capital structure on firm performance varied from country to country and industry to industry. In the context of India, it was observed that the literature pertaining to capital structure and firm performance is weak and unstructured. Therefore, this study suggested that future scholars must deeply examine the relationship between capital structure and performance of the firms belonging to different industries in India.

Keywords: Capital Structure, Firm Performance, Corporate finance, Capital Structure theories

1. Introduction

Capital structure is the most significant decision pertaining to the discipline of corporate financing and determines the way in which a firm finances its assets by integrating the equity and liabilities (Gul and Cho, 2019, p. 97). Capital Structure is determined as a blend of several types of sources for funding that a company sustains as per its decisions of funding. Similarly, firm performance can be identified as the organizational performance, the firm functioning, and the outcomes of its operations. Firm performance displays indicators of effectiveness and efficiency associated with the usage of all resources within a firm that can be evaluated in both the non-financial and financial aspects. As observed from the financial facet, performance can also be observed from the perspective of financial ratios like solvency, profitability, liquidity, and other significant ratios, however, the profitability ratio is the most important measure of firm performance. Some of the profitability ratios include Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI) (Surjandari and Minanari, 2019). Modigliani and Miller (1958) firstly proposed that in a rational market scenario, the capital structure is peripheral to the value of the firm. While Kraus and Litzenberger (1973) eased the tax premise in order to propound the theory of trade-off, which asserts that the firm governs its capital structure via maintaining stability between the advantages procured from the tax shield and the costs of bankruptcy associated with debt financing. Similarly, Jensen and Meckling (1976) propounded the agency theory pertaining to capital structure, which affirmed that the expensive principal- agent conflicts are caused due to the dissociation of management and ownership. It states that the financing choice of a firm is impacted by the agency costs that are because of the conflicting interests between the agent and the principal. Alternatively, the pecking order theory (Myers and Majluf, 1984), a substitute of the agency theory suggested that the initial choice of a firm is to primarily utilize the internal financing through retained earnings; while the second preference is debt and the last choice of the firm for financing is equity (Li, et al., 2019).

2. Purpose of the Study

The literature obtained and the previous works of scholars pertaining to the capital structure have led to the emergence of an extensive debate regarding whether excessive leverage reduces or enhances the value or performance of a firm and the findings procured remain mixed (Aggarwal and Padhan, 2017; Altaf and Shah, 2021; Chadha, and Sharma, 2015; Farhan et al., 2020).

Certain researchers exhibit a positive correlation pertaining to the performance of the firm and the financial leverage, although others have an opposite viewpoint. Thus, this review paper majorly aims to identify the status of previous research studies regarding capital structure and firm performance in the previous years. Furthermore, the study emphasises the gaps in the literature related to capital structure and firm performance and also aim to identify certain research questions for conducting further extensive research.

3. Literature Review

3.1 Capital Structure

Corporate finance is a mixture of several forms of external funds generally known as capital which are used to finance a business. It may include shareholder's equity, preferred stock, and debt and is mentioned in the balance sheet of the company (Takhumova et al., 2018). Locally and internationally, the interest of governments is growing in adopting and adhering to the best practices of internal control systems to ensure firms are best positioned to compete and to address the challenges posed by the world economy. In fact, the capital structure of an enterprise and the concept that debt may be seen as an essential tool for managers is key to the literature of finance and accounting as the managers must ensure minimized squandering of their company's resources.

Managers who choose well-designed internal control systems may best position themselves against the debt structure of their companies, and this consequently will reduce the possible conflict between managers and shareholders, thus reducing the chances of agency problems (Alabdullah, et al., 2018, p. 75). It is of paramount significance for the market economy to determine the development of capital, the optimisation of capital structures, the recognition of the optimum ratio of different sources and the quality of the management of resources. Adequate capital plays a key function in preserving an economic entity's performance throughout life, providing solvency, sustainability, and liquidity. Additionally, the quantity of equity directs the growth of the market for products and services and the possible enhancement of investing in the national economy. Capital structure optimization is one of the major and complicated challenges to be resolved via the company's financial management (Pavlova 2012; Gary et al. 2017; Tzabbar and Margolis 2017). The selected policy in this area impacts both the short and long-term financial sustainability of the enterprises and enables them to prioritize and classify the sources of funding.

The optimal development of capital structures, i.e. the determination of the best equity-to-debt ratio, is a significant financial management challenge (Um, 2017; Chiou and Tucker, 2017). Bajaj, Kashiramka, and Singh (2020) had a similar perception and suggested that it is definitely one of the main problems for a company to maintain a good balance between equity and debt sources. An enterprise's capital structure affects future money sources, capital costs, risk characteristics, positions of liquidity, investor returns and corporate valuation. It is a well-explored area of financial decision making with important contributions by leading academicians in terms of capital structure theories. The key element of Modigliani and Miller's (1958) theory of irrelevance laid the framework for corporate financing decision-making. Many economists have followed their fundamental concept, and there have been a range of theories to resolve the dilemma of capital structure like pecking-order theory, signalling theory, trade-off theory, stakeholder's theory and more. In a recent study conducted by Tripathy and Asija (2017), the researchers tried to comprehend the influence of the financial crisis on the determinants (tangibility, profitability, liquidity, and size) of certain Indian firms' capital structure.

The study outcomes suggested that size and tangibility had a substantial impact on the decisions of the capital structure prior to the period of crisis. Moreover, from the results, it can be suggested that the probability coefficient is negative, affirming an inverse association with debt. Additionally, the research proclaimed that the theory of pecking order was found to be more suitable as compared to the other theories in identifying the factors that impact the decisions related to the capital structure of the Indian businesses. Another similar study was conducted by Sofat and Singh (2017) which aimed to identify the most important capital structure determinants for certain Indian manufacturing firms. The study findings asserted that variables like ROA, risks associated with businesses, and composition of assets are positively correlated to the debt ratio, however, the capacity of debt service and firm size were negatively associated with the debt ratio. Moreover, return on assets, business risk, and asset composition were found to be notable capital structure determinants, although, debt service capacity and firm size were found to be trivial determinants.

3.2 Firm Performance

As discussed previously, Surjandari and Minanari (2019), described the firm performance as the organizational performance, the firm functioning, and the consequences of its activities. A company's performance exhibits measures of effectiveness and efficiency connected with the utilization of all resources inside a firm that may be assessed in both non-financial and financial terms. In financial terms, the performance is examined using financial ratios like solvency, profitability, liquidity, and other significant ratios, however, the profitability ratio is the most important measure of firm performance. Some of the profitability ratios include Return on Assets (ROA), Return on Equity (ROE), and Return on Investment (ROI).

Prahalathan and Ranjany (2011) believe that the concept of performance, in particular, because of its multifaceted significance, is a contentious subject in finance. The performance may be studied from both organizational and financial perspectives; the performance of an enterprise can be measured on the basis of factors including consumer satisfaction, growth, returns, and productivity. Financial performance (reflected in shareholder profit maximisation, asset maximisation, and profit maximisation) is dependent on the efficiency of the company. However, other researchers believe that the evaluation of financial performance is dependent on the residual income, return on investment, market capitalization, dividend per yield, earnings per share, growth in sales, price/earnings ratio, and more (Al-Homaidi, et al., 2019; Sheela, and Karthikeyan, 2012).

In this context, Kumari and Kumar (2018) tried to examine the factors from three streams, particularly, firm-level, industry level, and macro level, that determine the performance of a firm. The researchers found that the macro-level factors generally impacted all the firms and industries, however, the severity varied from industry to industry. Moreover, for the firm and industry level factors, mixed viewpoints were observed. On one hand, strategists and micro economists believe that industry size and structure are the most significant factors responsible for determining the profitability of a firm; while on the other hand, the resource-based perception asserts that the capabilities and internal resources of a firm lead to deviation in the profits of the firm. Moreover, the researchers contemplated that the factors of firm-level own the capability to explain the heterogeneity pertaining to the industry, since firms belonging to different sectors vary in terms of domains like advertising expenditure, fixed assets, inventory, liquidity, and research and development. Similarly, Le and Phan (2017) conducted a study to identify the association between capital structure and firm performance in Vietnam using panel data pertaining to the non-financial listed companies from a time period of 2007 to 2012.

The study findings suggested that the firm performance is negatively associated with the debt ratios. The findings were found to be in contradiction to the developed nations since most of the studies indicated that a positive association existed between company performance and decisions of capital structure in developed nations. The findings further revealed that in an emerging economy such as Vietnam, the advantages of debt due to tax savings may be smaller than the costs of financial distress. A strong information asymmetry and a poorly established financial system further limit the monitoring and evaluation role of debt.

Another study was conducted by Sheikh and Wang (2013) which aimed to affirm the influence of capital structure on the nonfinancial firm's performance in Pakistan. The study findings revealed that all capital structure metrics (i.e. long and short-term debt ratio, total debt ratio) are adversely correlated to ROA in all regressions, according to empirical data tests. As a result of this, the pooled OLS model shows a negative relationship between the total debt ratio and long- term debt ratio with the market-to-book ratio, whereas fixed effects models showed a positive relationship between total debt ratio, long-term debt, and market-to-book ratio. In all regressions, the short-term debt ratio was found to be positively correlated with the market-to-book ratio, although the correlation was negligible. A negative correlation between capital structure and performance suggested that agency difficulties may cause businesses to employ greater than necessary levels of debt in their capital structure. An extensive level of debt can enhance the power of the lender over the managers, resulting in less effective management and a detrimental impact on the firms performance.

3.3 Theoretical Perspective

The appropriateness of the capital structure is an essential choice for any company, as it is not only based on the necessity of maximizing shareholder profits, but also on the need to guarantee that the company is able to cope with its competitive surroundings. There have been varying perspectives over time about the optimum financial structure.

2.3.1 Modigliani Miller Value-Irrelevance Theory

The earliest theory regarding capital structure was given by Modigliani-(MM) Miller. Mm's proposition suggested that the value of a firm is irrelevant to the financing decisions and the capital structure. Modigliani and Miller asserted that the firm value is discounted free cash flow till present with the associated rate of return. When depreciated at the optimum capital cost, free cash flow surpasses the cash flow required to finance all projects with positive net present values. However, this theory has been proposed under perfect conditions on the capital market (Modigliani and Miller, 1958).

3.3.2 The conventional Trade-off theory

Modigliani and Miller clearly recognized the tax shield as a driver of the capital structure in the MM proposal. The benefits of the tax shield were thereafter realized to a large degree to be outweighed by the cost of financial difficulty. The tax shield is, however, a noticeable element but not the cost of financial difficulty. So, in order to be safer, businesses maintain the margin of security before using tax shields. Thus, tax shield advantages are weighed against financial distress costs. This theory is considered the conventional trade-off theory.

3.3.3 The Pecking Order Theory

The Pecking Order Model or the Pecking Order Theory is associated with the capital structure of a company. The theory was proposed by Stewart Myers and Nicolas Majluf (1984) and suggested that the managers exhibit a hierarchy while incorporating the financing sources. The theory of pecking order depicts that the managers exhibit the following sources of preferences in order to fund an opportunity for investment: initially via the retained earnings of the company, the next option is to gain funding through debt and finally adopting equity financing as the last option.

3.3.4 Agency Theory

As per Jensen and Meckling (1976), and Jenson (1986) the agency theory is based on the conflict of interest between shareholders, managers and debtholders in a firm. There are two types of conflicts, one a conflict between shareholders, managers and debtholders, and second a conflict between shareholders and managers. These conflicts results in costs to be borne by the firm and these costs are called agency costs. As per the agency theory, the firm should select such a capital structure (i.e use debt to that extend) which minimize the agency costs faced by the firm and maximizes the shareholders wealth. So the capital structure which minimises the agency costs is the optimal capital structure for the firm.

3.4 Impact of Capital Structure and Firm Performance

Twairesh (2014) conducted a research study to evaluate the effect of capital structure on Saudi Arabian non-financial companies' performance. For this purpose, regression along with econometric analysis was employed and the data was gathered from 74 non-financial companies from 2004-2012. The research portrayed the impact between the 3 aspects of capital structure (that is total debt (TD), long-term debt (LTD), and short-term debt (STD)) and the performance of the firms based on return on equity (ROE) and return on assets (ROA). From the research's outcomes, it was clear that ROA was significantly impacted by TD, LTD, and STD.

However, in the case of ROE, it was found that only LTD was responsible for affecting ROE. Furthermore, the study indicated that the size of the firm considerably affected the performance of the firm, since ROA was affected as a dependent factor. Awais et al. (2016) suggested that the decisions that the management of any organisation takes pertaining to the capital structure are of immense importance as they assist in improving the profits of the shareholders and any company's performance. Awais (2016) along with other researchers tried to identify the influence of the firm's capital structure on the performance of certain non-financial firms listed on the stock exchange in Pakistan. The data collected was assessed using STATA and the association between the aspects of capital structure (LTD, STD, and TD) and performance of the company's variables (like ROA, ROE, EPS and Tobin's Q).

The results of the research indicated that total debt and total assets had a notable impact on the performance of a firm. In the context of India, Khan (2012) assessed the association among the performance of the businesses, the capital structure, and the equity ownership for 438 firms in India that were listed on BSE from 2005-2012. The study employed sophisticated methods of analysis, data envelopment, and panel data evaluation.

The findings of the study were found to be in line with the model of agency cost and the researchers could not proclaim any notable influence of efficiency pertaining to leverage. The study also asserted nonlinearity in the association betweenthe performance of the companies and the capital structure ownership type. The efficiencies of the firms were found to decrease considerably during the study period at the time of recession. Another similar and recent study conducted by Dao, and Ta (2020) aimed to affirm the relationship pertaining to businesses' performance due to the capital structure employed.

The study adopted the method of secondary data analysis to draw crucial conclusions. The study involved the use of 32 reviews and journals and almost 50 papers. The study findings suggested that the performance of a company is detrimentally impacted by the decisions pertaining to capital structure, which shows it draws its implications from the theories of the pecking order, agency costs and trade-off theory.

Mathur et al. (2021) analysed the significance of correlation between capital structure decisions and financial performance on the pharma companies of India listed on BSE 500, the effect of expenditure of R&D on the financial performance of the company and also the moderating impact of intensity of competitiveness between the firm performance and capital structure. The study employed panel data analysis and OLS for drawing inferences. From the results of the study, it was affirmed that an elevated debt ratio is detrimental for the accounting performance of the chosen pharma companies and also the factor of competitiveness negatively moderates the association between the performance of the firm and the capital structure.

Sinha (2017) aimed to identify the relationship between the firm value and the decisions pertaining to capital structure. The study was conducted on 11 power firms that were listed on BSE and the study was conducted over the time phase of 2007-15. Several financial and statistical measures were taken into account like the depreciation, firm value, tax ratio, Tobin's Q and the debt-equity ratio was utilised for calculating leverage. Consequently, the results of the panel data analysis suggested that there existed a negative impact of leverage on the value of the company. Although, the study proclaimed that the other aspects were not affected due to the level of debt present within the capital structure of the firm.

Similarly, Aggarwal and Padhan (2017) assessed the impact of firm quality and capital structure on the value of a company with special reference to the hospitality corporations listed on the BSE index in India. The variables whose impact was tested on the value of the firm were size, leverage, tangibility, profitability, liquidity, inflation, GDP, and liquidity. Consequently, the study results depicted a notable association between the value of the firm with the liquidity, leverage, company quality, economic growth and size. The outcomes of the study also suggested that the theory of Modigliani miller does not hold true for the Indian hospitality industry.

Research Gap A company & capital structure is one of the most crucial decisions it makes. Moreover, the identification of the firm & optimal capital structure is one of the most essential aspects to consider during decision-making regarding the capital structure. From the studies conducted previously, it can be suggested that evidence pertaining to the correlation between the companies performance and the financial leverage are mixed, inconsistent and varied. In addition, there are just a few studies concerning emerging nations like India that experimentally investigate this link.

The current study adds to the existing body of knowledge regarding the impact of financial leverage on business performance by amassing the findings of different scholars within a single study frame. Also, as per the critical review of literature, it was found that not much literature is present that aims to identify the factors related to the firm which impact the financial decisions of the firms. Therefore, the current paper aims to comprehend and review the status of research studies regarding capital structure and firm performances conducted in the previous years and highlight the gaps in the available literature on optimal capital structure and firm performance. The study also comprehends the various theories associated with the capital structure and firm performance like the Agency theory, Modigliani Miller, the trade-off theory, and the pecking order theory.

4. Research Methodology

The current study has adopted a systematic review of literature in order to accomplish the proposed outcomes of the current study. According to Dewey and Drahota (2016), a systematic literature review (SLR) discovers, organizes, and rigorously inspects material in order to address a clearly stated issue. Before the systematic review is done, the criteria should be explicitly established in a well-defined procedure or strategy. It is a transparent method of research or thorough search that spans various databases and academic journals and can be duplicated by other scholars.

The method of SLR entails devising a well-thought-out research strategy that emphasises on a certain topic or answers a certain query. Within defined periods, the review specifies the sort of material explored, evaluated, and presented. The evaluation must contain the search techniques (like the search dates, platforms and databases), search keywords and the limitations of research. Moreover, coverage, accessibility, equality, focus, integration, clarity and transparency are the seven main criteria outlined by Pittway (2008) for quality systematic literature reviews. In the current study, the systematic literature review is performed in several steps, initially, the research problem was identified, secondly, the review protocol was validated and reviewed, next, the literature was identified, which was followed by the screening of the identified literature for inclusion. Moreover, these steps were then followed by evaluation of quality, extraction of relevant data, analysis and synthesis of the crucial data and ultimately drawing the inferences.

5. Findings and Discussion

As identified in the literature review section, Takhumova et al. (2018) identify capital structure as a mixture of several external funds like shareholder's equity, preferred stock, and debt in order to finance a company. Moreover, from the extensive review of literature, several definitions of firm performance were also recognised. According to Surjandari and Minanari (2019) firm performance can be determined as the organizational performance, the firm functioning, and the consequences of its activities. A company's performance exhibits measures of effectiveness and efficiency connected with the utilization of all resources inside a firm that may be assessed in both non-financial and financial terms. On the other hand, Prahalathan and Ranjany (2011) suggested that the performance may be studied from both organizational and financial perspectives and the performance of an enterprise can be measured on the basis of factors including consumer satisfaction, growth, returns, and productivity.

Several theories were also determined in the context of capital structure and firm performance. These included Value-Irrelevance Theory, the Conventional Trade-off theory, the Pecking Order Theory, and the Agency Theory. The Value-Irrelevance Theory suggested that the performance of an enterprise is independent of the financing decisions and the capital structure decisions, while the Conventional Trade-off theory affirms that tax shield advantages are weighed against financial distress costs. Additionally, the Pecking Order Theory states that in order to fund an opportunity, firstly the retained earnings of the company are utilised, the next option is to gain funding through debt and finally adopting equity financing as the last option.

Finally, it was propounded that according to the Agency Theory, the optimal capital structure is which minimises the agency costs faced by the firm and maximises the shareholders wealth. Additionally, while assessing the impact of Capital Structure and Firm Performance it was found that there existed a mixed belief regarding the same. Some of the scholars were of the perception that the performance of a company is detrimentally impacted by the decisions pertaining to capital structure (Dao, and Ta, 2020). While others had a perception that a notable association existed between the value of the firm and the liquidity, leverage, company quality, and economic growth (Aggarwal and Padhan, 2017). Moreover, it was also found that the influence of capital structure on firm performance varied from country to country and industry to industry. For instance, it can be observed that the study conducted by Twairesh (2014) affirmed that ROA was significantly impacted by TD, LTD, and STD.

However, in the case of ROE, it was found that only LTD was responsible for affecting ROE for non-financial firms in Saudi Arabia. While in the context of India, Khan (2012) asserted that there did not exist any notable effect of efficiency pertaining to leverage and the results were in line with the model of agency cost. The study also found non-linearity in the correlation between the performance of the companies and the capital structure ownership type.

6. Conclusion

The analysis suggests that the correlation between the companies performance and the financial leverage is mixed, inconsistent and varied and the effect of capital structure on companies' performance varied from country to country and industry to industry. In the context of developing economies like India, it was found that the literature pertaining to capital structure and firm performance is unstructured. Thus, future studies must be conducted with the objective of evaluating the impact of capital structure decisions on the performance of the firm in different industries in India.

The current review has tried to compile the varied perceptions of different scholars regarding the same and examined the status of research studies associated with the domain of capital structure and firm performance in the previous years and has consequently highlighted the significant gaps in existing literature related to capital structure and firm performance.

The study has also tried to affirm the various theories associated with the capital structure and firm performance like the Agency theory, Modigliani Miller, the trade-off theory, and the pecking order theory. The current review will lay a strong basis for future research of similar kinds that are needed to achieve progress and solve numerous difficulties and challenges associated with the financial decisions pertaining to capital structure and firm profitability. The research study will add to the current literature by attempting to introduce fresh insights into the domain of optimal capital structuring.

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Equity Research Analysis of Cement Industry

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ABSTRACT

The cement industry plays a crucial role in the construction sector and is a major contributor to the global economy. In this study, we conduct an equity research analysis of the cement industry to provide a comprehensive overview of the key drivers of industry performance and the competitive landscape. Our analysis begins with a review of industry trends, including the impact of global economic conditions on demand for cement and the evolution of production technologies. We also examine the supply side of the industry, including the distribution of global cement production and the impact of raw material costs on the profitability of cement companies.

Next, we delve into the financial performance of leading cement companies, analyzing key metrics such as revenue growth, profitability, and return on investment. We also assess the risks and opportunities facing the industry, including the potential impact of environmental regulations and the emergence of alternative construction materials. Finally, we provide an outlook for the future of the cement industry, including potential trends and challenges.

Keywords: Cement industry, equity research, industry analysis, demand and supply.

Introduction:

The Indian cement industry is one of the highly energy intensive industry which has a robust growth trajectory over the past decade. India's cement industry is the second largest in the world, in terms of production, with over 8% (545 million tonnes per annum in 2021) of the global installed capacity and generating employment for over 1 million people. Cement is a binding substance that is used in the construction industry to harden, set, and adhere to the other materials for binding them together. Cement is usually mixed with other substances, such as fine aggregates and sand & gravel to manufacture mortar and concrete respectively. The raw materials used in the production of cement include limestone, chalk, shells, shale, clay, and silica sand. The mixture of these raw materials is then heated at high temperatures to form a solid rock like substance, which is then powdered to obtain cement. India entered the Cement Era in 1914, when the Indian Cement Company Ltd. started manufacturing Cement in Porbundar in Gujarat. However, even before that a small cement factory was established in Madras in 1904 by a company named South India Industrial Ltd. Indian Cement Company Ltd produced only one type of cement which was designed by the British standard committee as “Artificial Portland Cement”. This company marketed its product in Mumbai, Karachi, Madras and other parts and became a financial success. To develop the country's infrastructure, the Indian government has undertaken several projects related to the construction of roads and highways, both in the rural and urban areas, along with the development of industrial hubs in different parts of the country. These schemes and initiatives are major contributors to drive the growth of the Indian cement industry since, it is one of the primary materials for the successful execution of such projects. Currently, China is the dominant producer and consumer of cement across the world, hence, the growth in the construction activities in this country will boost the market size, after that India plays an important role. As China has a dominant market it plays a vital role in Indian market.

Literature Review:

The Fundamental analysis for the share price valuation and statistical tool are used. The fundamental and statistical analyses form to forecasts future movements. Research work envisages on Financial Statement analysis and identifies that this analysis has traditionally been seen as part of the Fundamental analysis required for equity valuation. This paper outlines a financial statement analysis for use in equity valuation. Fundamental analysis and statistical analysis can co-exist in peace and complement each other. Since all the investors in the stock market want to make the maximum profits possible, they just cannot afford to ignore either fundamental or statistical analysis. This investigation mainly aims to evaluate the association of volatility and stock returns stock markets. The intention to analyze the stock markets provides an efficient intelligence to stock investors. This study has used daily data of identified markets, which is considered as more reliable than weekly and monthly data among the circle of stock researchers because of the high frequency data, whereas, previous studies comprises of low frequency data (weekly or monthly). Therefore, the use of daily data is making study unique of its kind among stock market-related research. Their investigation emerged with statistically significant findings confirming the existence of spillover effect of volatility and its influence on stock returns. The current study will be a significant addition in existing literature regarding the volatility, and equity relationship, and mean.

Objectives of the Study:

1. To analyze the evolution of the cement industry.
2. To compare the financial ratios of the leading and lagging companies in the industry.
3. To find the reasons for the growth of the industry

Methodology of the study:

The whole study can be termed as desk research. Hence there is no field work and collection of primary data for this research except for secondary information obtained by the medium of internet, journal and magazines. The top 5 performers of the industry have been chosen on the basis of their sales in the previous year.

Sources of Data:

Only secondary data was collected from the internet, company websites, magazines and various articles. Annual reports of the companies have been the main source of information for the company analysis.

Limitations of the study:

The study is limited to selected Top 5 cement companies in India

The number of years used for comparing the performance of these companies is 5.

Hypothesis:

H1: There will be significant difference between high or low financial efficiency of the company.

H0: There will be no significant difference between high or low financial efficiency of the company.

H1: There will be significant difference between liquidity position of company. HO: There will be no significant difference between liquidity of company.3. H1: There will be significant difference between high or low profitability position of company.

H0: There will be no significant difference between high or low profitability position of company

Conceptual Framework

Fundamental analysis involves three types of analysis:

Economic Analysis

Industry Analysis

Company Analysis

Economic Analysis:

It is the world's sixth-largest economy by nominal GDP and the third largest by purchasing power parity (PPP). According to the International Monetary Fund (IMF), on a per capita income basis, India ranked 145th by GDP (nominal) and 122nd by GDP (PPP).India's economy grew at 1.6 per cent in the fourth quarter of 2021-21, recording a slight pickup in GDP growth amid the Covid-19 second wave hitting the economy hard. In the full fiscal year, the economy shrunk by -7.3 per cent as the Covid-19 pandemic ravaged the economy.

The contraction in FY21 GDP is worse in more than 40 years, the government data shows. GDP at Constant Prices in Q4 of 2020-21 is at Rs 38.96 lakh crore, as against Rs 38.33 lakh crore in Q4 of 2019-20, showing a growth of 1.6 percent. India's 2020-2021 fiscal deficit at 9.3% of GDP. In absolute terms, the fiscal deficit works out to be Rs. 18,21,461 crores. For this financial year, the government had initially pegged the fiscal deficit at Rs. 7.96 lakh crores or 3.5% of the GDP in the budget presented in February 2020. Annual inflation rate in India eased to 4.29 percent in April of 2021, the lowest reading in three months from 5.52 percent in March.

The rise in inflation was driven by an increase in fuel and transportation costs along with an increase in some components of the food basket. Moreover, the record Covid-19 surge across the country now, especially at a time when advanced economies have already started recovering, could put serious upward pressure on inflation. Higher global inflation, rising commodity prices, local lockdown and a weaker rupee could bring in higher prices in India. This year 2021, Finance Minister Nirmala Sitharaman announced big-ticket expenditure but the budget, as in previous years, did cross the constitutional barrier of financial year ending March 31, 2022, without providing for adequate budgeted expenditure subsequently. Some examples are Rs 2.76 lakh crore (Rs 2.76 trillion) for the PM Garib Kalyan Yojana, Rs 2.87 lakh crore for the Jal Jeevan Mission, Rs 2.23 lakh crore for healthcare, Rs 3.05 lakh crore for power distribution scheme, Rs 1.97 lakh crore for the manufacturing sector, and Rs 1.41 lakh crore for the Urban Swachh Bharat Mission. These figures add up to tens of trillions of rupees. Against these announcements, only Rs 4.41 lakh crore of additional expenditure has been budgeted for in 2021-22, as mandated under Article 112 of the Constitution.

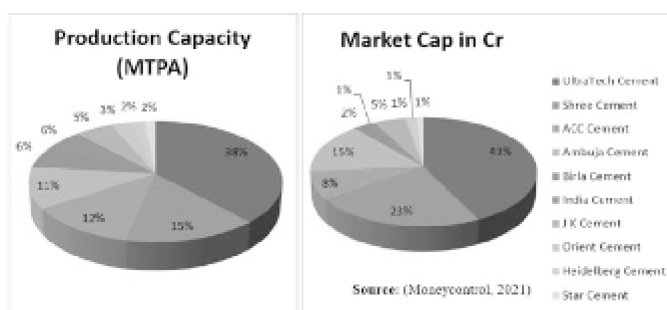
Industry Analysis:

India is the second largest producer of cement in the world. Thus, India's cement industry is a vital part of its economy, providing employment to more than a million people, directly or indirectly. Ever since it was deregulated in 1982, the Indian cement industry has attracted huge investments, both from Indian as well as foreign investors. India has a lot of potential for development in the infrastructure and construction sector and the cement sector is expected to largely benefit from it. Some of the recent major government initiatives such as development of 100 smart cities are expected to provide major boost to the sector. Expecting such developments in the country and aided by suitable government foreign policies, several foreign players such as Lafarge-Holcim, Heidelberg Cement and Vicat have invested in the country in the recent past. A significant factor which aids the growth of this sector is the ready availability of the raw materials for making cement, such as limestone and coal.Cement production reached 329 million tonnes (MT) in FY20 and is projected to reach 381 MT by Fy22.

However, the consumption stood at 327 MT in FY20 and will reach 379 MT by FY22. As India has a high quantity and quality of limestone deposits through-out the country, the cement industry promises huge growth potential. The production of cement in India is expected to reach 410.21 Mn tons by FY 2024, expanding at a compound annual growth rate (CAGR) of ~3.83% during the FY 2019-FY 2024 period, owing to rising demand from the government and housing contractors.A total of 210 large cement plants account for a combined installed capacity of 545 MT in the country, whereas 350 mini cement plants make up for the rest. Of the total 210 large cement plants in India, 77 are in the states of Andhra Pradesh, Rajasthan, and Tamil Nadu. Sale of cement in India stood at Rs 63,771 Crore in FY20. India's export of cement, clinker and asbestos increased at a CAGR of 6.44% between FY16-FY19. In FY20 (till January 2020), it reached US$ 1.66 billion.At a CAGR of 9%, India has added almost 40% of its existing cement manufacturing capacity over the past decade. This is above the average GDP growth rate of India at 7% over the same period. Moving forward, amidst the news of global economic slowdown, monetary agencies have revised India's growth forecast. It should be expected to be back on track over the medium term given the priority being accorded for the infrastructure development by the government in its various plans and policies. The Indian cement industry, with a sufficient buffer of capacity, is well placed to support even an aggressive growth rate.

Company Analysis:

The cement companies have been selected based upon the market share and production capacity.



The companies are as follows:
Ultratech Cement
Shree Cement
ACC Cement
Ambuja Cement
Birla Cement
Jk Cement.
Heidelberg Cement

Ultratech Cement:

UltraTech Cement Limited is the cement flagship company of the Aditya Birla Group. A USD 5.9 billion building solutions powerhouse, UltraTech is the largest manufacturer of grey cement, ready mix concrete (RMC) and white cement in India. It is the third largest cement producer in the world, excluding China. UltraTech is tsshe only cement company globally (outside of China) to have 100+ MTPA of cement manufacturing capacity in a single country. The Company's business operations span UAE, Bahrain, Sri Lanka and India. UltraTech has a consolidated capacity of 116.8 million tonnes per annum (MTPA) of grey cement. UltraTech has 22 integrated manufacturing units, 27 grinding units, one clinkerisation unit and 7 bulk packaging terminals. UltraTech has a network of over one lakh channel partners across the country and has a market reach of more than 80% across India. In the white cement segment, UltraTech goes to market under the brand name of Birla White. It has one white cement unit and one wall care putty unit, with a current capacity of 1.5 MTPA. UltraTech has over 130 ready mix concrete (RMC) plants in 50 cities across India. UltraTech pioneered the UltraTech Building Solutions (UBS) concept to provide individual home builders with a one-stop-shop solution for building their homes. Today, UBS (UltraTech Building Solution) is the largest single brand retail chain with over 2500 stores across India.

UltraTech is the first company in India and the second company in Asia to issue dollar-based sustainability linked bonds. As part of its CSR, UltraTech reaches out to nearly 2.1 million beneficiaries in over 500 villages across India covering areas of education, healthcare, sustainable livelihoods, community infrastructure and social causes.

Ratio Analysis for Ultratech Cement:

Ratio	Formula	2021	2020	2019	2018	2017
Operating profit Margin	EBITDA / Net sales	27%	23%	19%	21%	24%
Return on capital employed	EBIT / (Shareholders Funds+ LT Loans)	15.05	12.03	10.42	10.36	13.92
Interest Coverage Ratio	EBIT / INTEREST	7.27	4.06	3.12	3.78	7.61
Debt Equity Ratio	LT Debt / equity	0.25	0.37	0.57	0.54	0.18
Inventory turnover ratio	COGS / inventory	8.66	8.35	8.69	7.71	8.50
Working capital turnover ratio	Sales / (current assets- current liabilities)	12.69	83.26	-21.07	-64.30	5.35
Valuation Ratio						
Earnings per share ratio	Net profit - preferred dividend / (no. of outstanding shares)	185.13	189.1	84.31	81.25	95.7
Dividend Yield ratio	Dividend per share / market value per share	0.59%	0.31%	0.30%	0.25%	0.28%
Dividend payout ratio	(total dividend / net profit) * 100	19.99	6.88	13.09	12.92	10.45
P/E Ratio	Market price/Earnings per share	33.92	22.11	45.60	50.75	37.84
PEG Ratio	PE/EPS growth	(16.16)	0.18	12.11	(3.36)	
DuPont Analysis						
Return on Equity		12%	14%	9%	9%	11%
Net Profit Margin		0.12	0.13	0.06	0.08	0.11
Asset turnover Ratio		0.54	0.57	0.57	0.54	0.60
Leverage (Gearing)	Assets/ Equity	1.85	1.88	2.48	2.10	1.64

Altman Z-Score	Zone	Distress	Grey	Grey	Grey	Safe
Z score	Altman Z-Score = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E	0.91	2.87	2.70	2.75	3.32
	A = working capital / total assets	0.04	0.01	(0.03)	(0.01)	0.11
	B = retained earnings / total assets		0.07	0.08	0.09	0.12
	C = earnings before interest and tax / total assets	0.10	0.07	0.05	0.06	0.10
	D = market value of equity / total liabilities	-	3.26	3.15	3.15	3.49
	E = sales / total assets	0.54	0.57	0.57	0.54	0.60

Shree Cement:

Shree Cement is an Indian cement manufacturer, founded in Beawar, Rajasthan, in 1979. Now headquartered in Kolkata, it is one of the biggest cement makers in Northern India. It also produces and sells power under the name Shree Power (Captive Power Plant) and Shree Mega Power (Independent Power Plant). Shree Cement markets its products under three Shree Ultra Jung Rodhak Cement, Bangur Cement and Tuff Cemento. Shree cement registered 12588.39 Cr net sales for the year 2020-21 and net profit of 2311.93 Cr. Shree cement company is among the top 3 cement groups in India. Shree cement company is among top 50 listed companies in India in terms of market capitalisation as on 31st March,2021. Company operations are span across India and UAE with 4 integrated plants in India, 1 in UAE and 8 grinding units. The company's manufacturing operations are spread over North and East India with presence across approximately six states. It has a cement production capacity of approximately 37.9 MTPA. The company has operations in Rajasthan, Uttarakhand, Bihar, Haryana, Chhattisgarh, and Uttar Pradesh. It produces synthetic gypsum to replace use of natural gypsum in cement manufacturing. The company plans to increase its capacity at 12% compound annual growth rate (CAGR) to 80 million tonnes by FY26. Shree cement was also among the industry pioneers for the use of alternate fuel resources in the production of cement.

Ratio Analysis for Shree Cement:

Ratio	Formula	2021	2020	2019	2018	2017
Operating profit Margin	EBITDA / Net sales	0.35	0.33	0.25	0.28	0.30
Return on capital employed	EBIT / (Shareholders Funds + non-current liabilities)	0.17	0.11	0.08	0.15	0.15
Interest Coverage Ratio	EBIT / INTEREST	13.24	7.84	6.10	14.51	12.83
Debt Equity Ratio	LT Debt / equity	0.09	0.13	0.24	0.25	0.07
inventory turnover ratio	COGS/ inventories	5.84	5.76	5.71	4.90	5.42
Working capital turnover ratio	Sales / (current assets- current liabilities)	3.42	3.28	5.85	3.72	7.34
Valuation Ratio						
Yield ratio	Dividend per share/market value per share		0.01	0.00	0.00	0.01
Earnings per share	(Net profit-Preferred dividend) / No. of outstanding share	640.77	445.08	273.00	397.33	384.39
Dividend payout ratio	Total dividend / net profit		0.25	0.13	0.13	0.32
PE ratio	Market value/EPS	43.75	44.86	65.04	41.63	43.13
PEG ratio	PE/EPS growth	1.00	0.71	-2.10	13.88	

DuPont Analysis						
Return on Equity		0.15	0.12	0.10	0.16	0.17
Net Profit Margin		0.18	0.13	0.08	0.14	0.14
Asset turnover Ratio		0.60	0.62	0.77	0.67	0.85
Leverage (Gearing)	Assets/ Equity	1.38	1.49	1.58	1.70	1.45

Altman's Z score						
	Coefficient		2020	2019	2018	2017
working capital/total assets	1.2		0.19	0.13	0.18	0.12
Retained earnings/ total assets	1.4		0.23	0.25	0.22	0.24
earning before interest and tax / total asset	3.3		0.12	0.10	0.13	0.15
market value of equity / total liabilities	0.6		11.23	11.04	9.22	16.63
sales/ total assets	0.999		0.62	0.77	0.67	0.85
Z score			8.29	8.24	7.15	11.79
Zone			safe	safe	safe	safe

ACC Cement:

ACC Limited is India's foremost manufacturer of cement and is also the ready- mixed concrete supplier with a countrywide network of factories and sales offices. The organization was established in the year 1936. ACC is acknowledged as the pioneer and trendsetter in most of the cement and concrete technology in India. The organization is among the first companies in India to have included environmental protection as a corporate commitment. ACC has won regularly accolades for best practices in environment management at its plants and mines, and for demonstrating good corporate citizenship. The quality of its products and customer services makes ACC the most preferred brand in the Indian cement industry.

ACC was formed in the year 1936 where all the ten existing cement companies came together under one umbrella in a historic merger - the country's first notable merger at a time when the term mergers and acquisitions was not even heard of. The history of ACC spans a wide canvas beginning with the lonely struggle of its pioneer F. E. Dinshaw and couple of other Indian entrepreneurs who founded the Indian cement industry. Their efforts to face competition for survival in a small but aggressive market mingled with the stirring of a country's nationalist pride that touched all walks of life - including trade, commerce, and business. ACC Limited is part of the worldwide Holcim Group. It was formally established on August 1, 1936. Sadly, F E Dinshaw, the man recognized as the founder of ACC, died in January 1936 which was just months before his dream could be realized.

Ratio Analysis for ACC Cement:

Ratio	formula	2020	2019	2018	2017	2016
operating profit Margin	EBITDA / Net sales	0.18	0.16	0.14	0.15	0.14
Return on capital employed	EBIT / (Shareholders Funds + non-current liabilities)	0.15	0.16	0.14	0.14	0.06
Interest Coverage Ratio	EBIT / INTEREST	32.40	21.00	16.20	12.40	12.00
Debt Equity Ratio	LT Debt / equity	0	0	0	0	0

Inventory Turnover Ratio	sales / Inventories	15.00	13.40	8.60	9.20	8.90
Working Capital Turnover Ratio	sales / (current assets- current liabilities)	3.81	5.60	7.67	16.62	-203.61
PE Ratio	market price of share /earning per share	21.56	24.11	20.32	36.92	41.77
PEG Ratio	PE/EPS GROWTH	5.22	-2.40	0.31	0.71	
DuPont Analysis						
Return on Equity		0.11	0.12	0.14	0.10	0.07
Net Profit Margin		0.11	0.09	0.10	0.07	0.05
Asset turnover Ratio		0.74	0.89	0.90	0.86	0.81
Leverage (Gearing)	Assets/ Equity	1.43	1.48	1.52	1.58	1.55
Altman Z-Score	zone					
	Altman Z-Score = 1.2A + 1.4B + 3.3C + 0.6D + 1.0E	4.38	5.00	5.10	5.40	4.20
	A = working capital / total assets	0.19	0.16	0.12	0.05	-
	B = retained earnings / total assets	0.49	0.45	0.42	0.38	0.37
	C = earnings before interest and tax / total assets	0.10	0.10	0.09	0.09	0.06
	D = market value of equity / total liabilities	4.00	5.07	5.38	6.10	4.42
	E = sales / total assets	0.74	0.90	0.90	0.87	0.81

Ambuja Cement

Ambuja Cements Limited, formerly known as Gujarat Ambuja Cement Limited, is an Indian major cement producing company. The Group markets cement and clinker for both domestic and export markets. The company has entered into a strategic partnership with Holcim, the second-largest cement manufacturer in the world from 2006. Holcim had, in January, bought a 14.8 percent promoters' stake in the GACL for INR 21.4 billion. Currently Holcim holds 61.62% of the shares in Ambuja Cements. Currently, Ambuja Cement has a cement capacity of 29.65 million tonnes with five integrated cement manufacturing plants and eight cement grinding units across the country. The company has many firsts to its credit – a captive port with four terminals that has facilitated timely, cost-effective, cleaner shipments of bulk cement to its customers. To further add value to our customers, the company has launched innovative products like Ambuja Roof Special, Ambuja Cool Walls, Ambuja Kawach and Ambuja Cement Compocem. The new products not only fulfil important customer needs but also help in significantly reducing carbon footprints. Ambuja Cement is the industry leader in responsible use of resources, both natural and man-made. The company has been certified over eight times water positive, a feat achieved through conservation efforts and increasing water efficiency in its plants. It is also plastic negative, by burning as much as over 75,000 tonnes of plastic waste in its kilns, equivalent to 2.5 times of total plastic used. The company also generated 7.1% of its power needs from renewable resources. Ambuja Knowledge Centres (AKCs), a unique initiative by the company, serves as a knowledge sharing platform for construction professionals that includes practical workshops on mix design and quality supervision. Currently, over 30 AKCs are functional across India.

Ratio Analysis of Ambuja Cement:

Ratio	Formula	2021	2020	2019	2018	2017
operating profit Margin	EBITDA / Net sales	0.27	0.22	0.20	0.21	0.24
Return on capital employed	EBIT / (Shareholders Funds+ Non-current liabilities)	0.12	0.09	0.08	0.08	0.07
Interest Coverage Ratio	EBIT / INTEREST	30.07	24.32	20.87	16.11	19.71

Debt Equity Ratio	LT Debt / equity	0.00	0.00	0.00	0.00	0.00
inventory turnover ratio	COGS/ inventories	11.69	9.98	7.41	8.81	8.09
Working capital turnover ratio	sales / (current assets- current liabilities)	-100.89	4.86	5.61	8.11	18.61
Valuation Ratio						
Yield ratio	Dividend per share/market value per share	0.07	0.01	0.01	0.01	0.01
Earnings per share	(Net profit-Preferred dividend)/No. of outstanding s	9.02	7.7	7.49	6.29	4.89
Dividend payout ratio	Total dividend / net profit	2.05	0.19	0.27	0.25	0.57
PE ratio	Market value/EPS	27.47	26.05	28.77	42.05	42.35
PEG ratio	PE/EPS growth	1.60	-9.30	1.51	1.47	
DuPont Analysis						
Return on Equity		0.09	0.07	0.07	0.06	0.05
Net Profit Margin		0.16	0.13	0.13	0.11	0.10
Asset turnover Ratio		0.45	0.43	0.45	0.46	0.40
Leverage (Gearing)	Assets/ Equity	1.25	1.22	1.20	1.23	1.22
Altman's Z score						
	Coefficient	2021	2020	2019	2018	2017
working capital/total assets	1.2	0.00	0.09	0.08	0.06	0.02
Retained earnings/ total assets	1.4	0.06	0.13	0.09	0.05	0.03
earning before interest and tax / total assets	3.3	0.10	0.08	0.07	0.07	0.06
market value of equity / total liabilities	0.6	9.52	8.32	10.25	11.29	9.84
sales/ total assets	0.999	0.45	0.43	0.45	0.46	0.40
Z score		6.57	5.96	7.05	7.60	6.57
Zone		safe	safe	safe	safe	safe

Birla Cement

Birla Corp. is a part of M.P.Birla group with a history of 6+ decades in cement industry. It has 4.2% of the market share in Indian cement industry. It is currently producing cement at seven locations through its ten manufacturing units with a combined capacity of nearly 15.5 million tons per annum. The Cement Division of 10 plants at seven locations are Satna & Maihar (Madhya Pradesh), Raebareli & Kundanganj (Uttar Pradesh), Chanderia (Rajasthan), Butibori (Maharashtra) and Durgapur (West Bengal). The production units have been renovated and modernized to ensure that the cement is at par with the best. They manufacture varieties of cement like Ordinary Portland Cement (OPC), 43 & 53 grades, Portland Pozzolana Cement (PPC), fly ash based PPC, Low Alkali Portland Cement, Portland Slag Cement (PSC), Low Heat Cement and Sulphate Resistant Cement. The cement is marketed under the brand names of MP Birla Cement Perfect Plus, Samrat Advanced, Ultimate Ultra, Unique, Samrat, Ultimate, Chetak, Psc, Multicem & Concrecem, bringing the product under the common brand of M P Birla Cement.

Ratio Analysis of Birla Cement:

Ratio	Formula	2021	2020	2019	2018	2017
Operating profit Margin	EBITDA / Net sales	0.16	0.16	0.11	0.11	0.13
Return on capital employed	EBIT / (Shareholders Funds + non-current liabilities)	0.08	0.09	0.05	0.04	0.07

Interest Coverage Ratio	EBIT / INTEREST	4.32	3.27	1.90	1.67	2.65
Debt Equity Ratio	LT Debt / equity	0.20	0.29	0.38	0.41	0.58
Inventory Turnover Ratio	COGS / inventory	6.48	6.98	6.83	6.66	7.08
Working Capital Turnover Ratio	Sales / (current assets- current liabilities)	6.50	7.48	6.44	5.01	4.72
Valuation Ratio						
Earnings per share ratio	Net profit - preferred dividend / (no. of outstanding shares)	55.65	41.02	17.89	14.95	27.79
Dividend Yield ratio	Dividend per share / market value per share	0.01	0.01	0.01	0.01	0.01
Dividend payout ratio	(total dividend / net profit) * 100	0.18	0.18	0.42	0.43	0.23
P/E Ratio	Market Value/ EPS	15.38	13.75	29.26	53.51	25.41
PEG Ratio	PE/ EPS Growth	0.43	0.11	1.49	-1.16	
DuPont Analysis						
Return on Equity		0.09	0.07	0.03	0.03	0.07
Net Profit Margin		0.10	0.07	0.03	0.03	0.06
Asset turnover Ratio		0.56	0.60	0.57	0.50	0.60
Leverage (Gearing)	Assets/ Equity	1.65	1.81	1.85	1.86	2.02
Altman Z-Score	**Zone**	Grey	Distress	Distress	Distress	Grey
Z score	= 1.2A + 1.4B + 3.3C + 0.6D + 1.0E	2.11	1.72	1.48	1.77	1.95
	A = working capital / total assets	0.09	0.08	0.09	0.10	0.13
	B = Surplus and reserves / total assets	-	0.07	0.05	0.05	0.06
	C = earnings before interest and tax / total assets	0.05	0.05	0.02	0.01	0.03
	D = market value of equity / total liabilities	2.11	1.24	1.13	1.74	1.68
	E = sales / total assets	0.56	0.60	0.57	0.50	0.60

J K Cement:

A leading cement manufacturer in the country, JK Cement Ltd is an affiliate of the multi-disciplinary industrial conglomerate JK Organisation, which was founded by LalaKamlapat Singhania. For over four decades, JK Cement has partnered India's multi-sectoral infrastructure needs on the strength of its product excellence, customer orientation and technology leadership. The Company has over four decades of experience in cement manufacturing. Our operations commenced with commercial production at our first grey cement plant at Nimbahera, Rajasthan in May 1975. Subsequently, the company also set up 2 more units in Rajasthan at Mangrol and Gotan. In the year 2009, the company extended its footprint by setting up a green-field unit in Muddapur, Karnataka giving it access to the markets of south-west India.

In the year 2014, the company further expanded its capacity in the north with brownfield expansion of 1.5 MTPA integrated unit at Mangrol and split grinding unit of 1.5 MTPA at Jhajjar. With the new grinding units in Aligarh and Balasinor further strengthening JK Cement's growing footprints, the Company now has an installed grey cement capacity of 7 MTPA, making it one of the top cement manufacturers in the country. JK White Cement, a division of JK Cement Ltd., enjoys a PAN India presence and the Company is the leading producer of Wall Putty in the Country. The Company is the second largest manufacturer of white cement in India, with an annual capacity of 600,000 tonnes. Having established a strong presence in India, the Company made its first international foray with the setting up of a green-field dual process White Cement-cum-Grey Cement plant in the free trade zone at Fujairah, U.A.E to cater to the GCC and African markets. JK White Cement is sold across 43 countries around the globe. With the commissioning of this plant, JK Cement became one of largest producers of White Cement in the world, with a total white cement capacity wall putty capacity of 2.4 MTPA. JK Cement was the first company to install a captive power plant in the year 1987 at Bamania, Rajasthan and the first cement company to install a waste heat recovery power plant to take care of the need of green power. Today at its different locations, the Company has captive power generation capacity of over 125.7 MWs which includes 23.2 MW of waste heat recovery power plants. We are steadily enhancing our capacity, diversifying our range of products, ushering in advanced technology and quality assurance, and above all, expanding our presence nationally and internationally. Our brands continue to enjoy the trust of millions of consumers for the high quality and innovation benchmarks that we have attained. Superior products and a strong Brand name, an extensive marketing and distribution network and the technical know-how represent JK Cement's abiding strengths.

Ratio Analysis of jk Cement:

Ratio	formula	Year				
		2021	2020	2019	2018	2017
profitability ratio						
operating profit Margin	EBITDA / Net sales	23.08	20.18	18.09	19.18	20.88
EBIT Margin	EBIT / Net Sales	19.21	16.21	14.14	15.08	16.13
Net Profit Margin	Net Profit / Net Sales	10%	7%	7%	8%	6%
Return Ratio						
Return on Equity (Net worth)	Net Profit / Shareholder Funds	16.15	12.80	11.23	15.92	11.26
Return on capital employed	EBIT / (Shareholders Funds+ LT Loans)	16.33	14.03	12.62	14.25	12.70
Coverage Ratio						
Interest Coverage Ratio	EBIT / INTEREST	5.45	3.93	3.13	2.79	2.19
stability ratio						
Debt Equity Ratio	LT Debt / equity	0.72	0.73	0.68	0.96	1.22
Debt Equity Ratio	Total Debt / Equity	0.99	0.99	0.91	1.24	1.51
Debt to Asset Ratio	debt / asset	0.59	0.60	0.58	0.64	0.68
liquidity ratio (solvency ratio)						
Current ratio	Current assets / Current liabilities	1.72	1.31	1.32	1.32	1.18
quick ratio	(cash + receivables)/ current liabilities	0.91	0.53	0.71	0.69	0.56
Turnover Ratio						
Total asset turnover ratio	Sales / total assets	0.69	0.69	0.71	0.76	0.63

Fixed Asset Turnover Ratio	sales / fixed assets	1.23	1.08	1.17	1.23	0.98
inventory turnover ratio	sales / inventory	9.22	8.61	8.82	8.54	7.44
Capital turnover ratio	sales / capital employed	1.70	1.72	1.70	2.12	1.98
Working capital turnover ratio	sales / (current assets- current liabilities)	5.06	10.88	10.72	11.93	17.84
DuPont Analysis						
Return on Equity		16.15	12.80	11.23	15.92	11.26
Net Profit Margin		10%	7%	7%	8%	6%
Asset turnover Ratio		0.69	0.69	0.71	0.76	0.63
Leverage (Gearing)	Assets/ Equity	3.50	2.51	2.40	2.79	3.12

Heidelberg Cement :

Heidelberg Cement India Limited formerly known as Mysore Cements Limited (MCL) is a subsidiary of Heidelberg Cement Group Germany. The scompany operates three plants located at Damoh (Madhya Pradesh) Jhansi (Uttar Pradesh) and Ammasandra (Karnataka) with an installed cement manufacturing capacity of 6.26 MTPA. Heidelberg Cement is one of the world's largest building materials companies.

The Company increased its capacity to 5.4 million tonnes p.a. through brown field expansion of its facilities in Central India in 2013.The new manufacturing capacity has enabled the Company to increase its market share in Central India i.e., Madhya Pradesh and Uttar Pradesh and in markets of Bihar, Haryana, and Uttarakhand.

With the help of committed sales efforts supported by quality products, the Company has carved a niche for its brand "mycem" in new markets and has further improved its brand positioning in the existing ones. Madhya Pradesh and Uttar Pradesh and in markets of Bihar, Haryana, and Uttarakhand. With the help of committed sales efforts supported by quality products, the Company has carved a niche for its brand "mycem" in new markets and has further improved its brand positioning in the existing ones.

Mysore Cements Limited (MCL) a Heidelberg Cement Group Company was incorporated on May 13, 1958, as a public limited company by a Karnataka based industrialist in technical and financial collaboration with Kaisers of USA. Heidelberg Cement with its core products being cement ready mixed concrete aggregates and related activities is one of the leading producers of building materials worldwide.

Ratio Analysis of Heidelberg Cement :

RATIO ANALYSIS OF HEIDELBERG CEMENT						
Ratio	Formula	Year				
		FY 2020-21	FY 2019-20	FY 2018-19	FY 2017-18	FY 2016-17
Profitability Ratio						
Operating Profit Margin	EBITDA / Net sales	26%	27%	25%	21%	18%

Coverage Ratio						
Interest Coverage Ratio	EBIT / INTEREST	8.69	6.39	5.57	3.79	2.27
Stability ratio						
Debt Equity Ratio	LT Debt / equity	0.29	0.42	0.52	0.60	0.71
Current Ratio	Current assets / Current liabilities	1.09	1.10	0.97	0.77	0.62
Quick Ratio	(Cash + Receivables)/ Current liabilities	0.51	0.53	0.40	0.27	0.04
Turnover Ratio						
Inventory Turnover Ratio	Sales/ inventories	13.02	14.80	12.60	14.66	12.09
Working Capital Turnover Ratio	sales / (current assets- current liabilities)	26.76	22.69	-81.41	-9.46	-5.90
Valuation Ratio						
Earning Per Share Ratio	(Net Profit-Preference Dividend)/ No. of Outstanding Shares	13.9	11.8	9.7	5.9	3.4
Dividend Per Share Ratio	Dividend/ No. of Outstanding Ratio	1.5	3	1	2.5	2
Dividend Payout Ratio	(Total Dividend/ Net Profit)*100	365.88 %	0.00%	0.00%	0.00%	0.00%
Yield Ratio	(Dividend per share/ Market Value Per share)*100	0.67%	1.82%	0.59%	1.66%	1.70%
P/E Ratio	Market Price per share/ Earning per share	16.21	13.94	17.39	25.56	34.68
Dupont Analysis						
Return on Equity		0.21	0.20	0.19	0.13	0.08
Net Profit Margin		0.15	0.12	0.10	0.07	0.05
Asset turnover Ratio		0.74	0.77	0.78	0.73	0.70
Leverage (Gearing)	Assets/ Equity	1.90	2.12	2.30	2.42	2.49
Altman's Z score						
	Coefficient	2021	2020	2019	2018	2017
Working Capital/ Total Assets	1.2	0.03	0.03	-0.01	-0.08	-0.12
Retained Earnings/ Total Assets	1.4	0.45	0.39	0.35	0.32	0.31

EBIT / Total Assets	3.3	0.16	0.17	0.15	0.11	0.08
Market Value of Equity / Total Liabilities	0.6	0.00	0.00	0.00	0.00	0.00
Sales/ Total Assets	0.999	0.74	0.77	0.78	0.73	0.70
Z score		1.90	1.92	1.77	1.46	1.27
Zone		Safe	Safe	Safe	Grey	Grey

Conclusion:

This research conducted on cement companies in India. The ratio analysis is performed on all companies for the past 5 years. Descriptive statistics showed that the emerging markets have higher returns with the higher risk-return trade off. In contrast, developed markets have low annual returns with the low risk-return trade-off. Correlation analysis showed the significant positive correlation among the market and stock. The econometric analysis showed that the values of likelihood ratios are large and significant that suggested is the suitable choice to present the behavior of daily returns, which has effectively captured the time-based reliance of volatility. It is risky in trading in volatile market because any point of time the stock can be drop down and can go up. Sometimes there will be difficult to decide when to enter and exit the share the ratio analysis gives the investors an idea of company's financial health in terms of liquidity.

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Blockchain Intelligence: Where Blockchain Meets Artificial Intelligence

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ABSTRACT

We're in the midst of a time of unparalleled digital disruption and transformation. The breakthrough technologies that are at the heart of digital disruption and transformation are artificial intelligence and blockchain. They have become most trending and unruly technologies. Blockchain is gaining extensive attention because of cryptocurrencies and also due to its provision of secure and decentralized resource sharing manner. AI, on the other hand, offers intelligence and decision-making capabilities for machines that are similar to humans. Both AI and blockchain, spreading at a phenomenal rate and having distinct degree of technological complexity and multi-dimensional business implications, are in situations where they can benefit from each other, and help one another. The researcher of this paper explains how and why these transformative technologies and their convergence can alter marketing as we know it today. The researcher also presents a case study to summarise various marketing use cases that will be used for transformative innovations and their implications for society firms, customers, and, eventually, academic studies. This work looks at the detailed literature on the interaction and possible collaboration areas between the blockchain and AI that can benefit marketing and the list is nowhere close to being completed.

Keywords: Blockchain; Artificial Intelligence; Machine Learning.

Introduction

Blockchain in marketing, which was previously considered a fad, is now becoming mainstream as companies such as Unilever, Nestle, McDonald's, and others have signed up for the technology to improve transparency in traditional and digital marketing, and it is now being referred to as a global revolution. As blockchain is rapidly gaining widespread adoption in marketing, we must know the three fundamental reasons for it i.e., Decentralization, Immutability and Transparency. The ideas that were mere theory in Blockchain and AI technology are being replaced with valid and tried solutions solving transparency, efficiency, and tackling fraud.

More than ever before, a large number of established firms across a wide range of industries are facing an existential threat from digital disruption. The average tenure of companies on the S&P 500 is expected to shrink from 33 years in 1965 to about 14 years by 2026 (Mochari, 2016). According to Forrester research, by 2020, every business will become either a digital predator or a digital prey (Evans, 2012). The projected outcome of Forrester is bolstered by the fact that consumers are increasingly adopting digital technology-powered products and services that are cheaper, better and/or faster. For example, consumers are shopping more from Amazon relative to traditional bricks–and-mortar stores, increasingly using Uber or Lyft instead of calling a traditional taxi service, switching from traditional broadcast television to streaming programmes on Netflix, YouTube and Amazon, and so on. Today, digital technologies are fast evolving and becoming streamlined, mobile, connected and automated, thereby shifting the level playing field for firms.

The challenge lies in the ability of each firm (especially established firms, regardless of their size) to proactively respond to the opportunities and challenges that accompany the current wave of digital disruption. From the standpoint of marketing, it entails embracing digital transformation with the overarching goal of offering a superior value proposition to the firm's customers. At the core of digital disruption resides a set of key transformative technologies. In this paper, we review three transformative technologies that currently demonstrate the strongest potential to disrupt and transform traditional business models in general and marketing practices in particular. These three promising transformative technologies are (a) artificial intelligence (AI), (b) mixed reality and (c) blockchain.

Objective of the Paper

- The primary goal of this research is to examine different aspects of blockchain and artificial intelligence and to demonstrate the importance of marketers using it as a marketing tool for their products and services.
- The point-to-point model of airlines such as Southwest Airlines and Ryanair has disrupted the traditional hub-and-spoke model of large airlines. Similarly, advances in nanotechnology and fracking (or hydraulic fracturing) have disrupted the chemical and oil and gas industry respectively. However, such disruptions pale in comparison to the digital disruptions we are witnessing today on at least three dimensions—speed, scope and scale.

Overview of Transformative Technologies

A transformative or disruptive technology, simply put, is any technology that causes a significant shift. In this segment, we'll try to identify and comprehend three big digital disruptive technologies that have the potential to radically alter traditional marketing practises.

Blockchain

Blockchain is reshaping various market sectors as a revolutionary software technology. Since it allows for safe and decentralised resource sharing, blockchain is gaining a lot of attention. However, existing blockchain systems face a range of challenges in terms of operational maintenance, smart contract quality assurance, and malicious activity detection in blockchain data. Recent developments in artificial intelligence provide opportunities for overcoming the challenges mentioned above.

Think of blockchain as a Google doc, where only those with authorizations are allowed any contributions or access. All permissioned users have access to the same document at the same time, and any updates are visible and notified in real time. Each entry is called a 'block' that contains a timestamp and the continuation of the blocks creates a 'chain', hence the name blockchain (Kecskés, 2018) . Any asset such as money, land, property or identity can be digitally represented on a blockchain. Blockchain systems are designed to be super secure. Each transaction is protected by cryptography, coding each block in a way that ensures resistance to modifications or hacking (Kumar, 2018). This allows users to solely rely on the blockchain without having to use a centralized authority such as government or bank to verify the exchanges (Conick, 2017). A centralized authority is vulnerable to large-scale security breach or failure, while a decentralized or distributed ledger sends a copy to every member in the network, thereby providing extra security (Gopal, 2018).

As seen in Figure 1.1, with the traditional centralized method of doing things, every transaction must go through a central bank, whereas with blockchain, a centralized bank becomes redundant and unnecessary when all parties are interconnected on the same network. Each member in the network has visibility and communication to each transaction. According to Gartner, the business value-add of blockchain 'will exceed $3.1 trillion by 2030' (Gartner 2017).

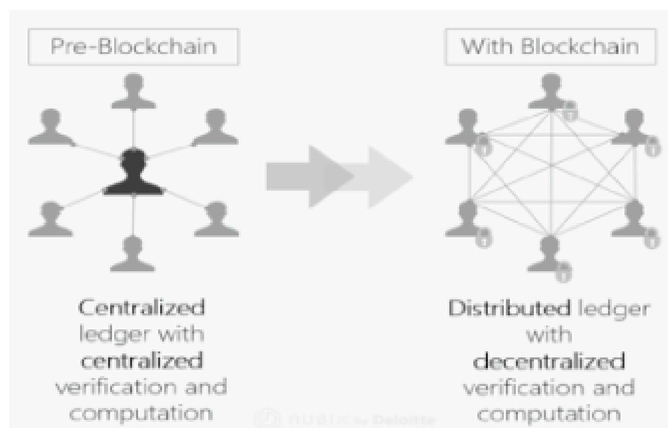

Figure 1.1: A Centralized (Conventional) Versus a Decentralized (Possible with Blockchain Technology) Business Network for Managing Exchange of Secure Transactions

Artificial Intelligence

Artificial intelligence, on the other hand, provides intelligence and decision-making capabilities to computers that are human-like. Artificial intelligence (AI) is a broad term that encompasses machine learning and cognitive computing. It refers to the capacity of intelligent agents to perform cognitive tasks.

The ability of computers to perform and imitate human-like behaviours such as perceiving, reasoning, learning, and problem-solving is known as artificial intelligence (AI). AI is predicted to have one of the most transformative impact on almost every industry and company in the next decade or so. Artificial intelligence (AI) would undoubtedly be widely used in five years. However, we have no idea how it will appear. According to a study published by Allied Market Research, the global artificial intelligence market is projected to reach $18.11 billion by 2025, with a CAGR of 49.6%.

Machine Learning

Machine learning is a subset of artificial intelligence that, for the most part, reflects the current state of the field. Machine learning refers to computer systems (machines) that are configured (programmed) to learn from data rather than being given clear instructions on how to perform a particular task. This problem is expected to be addressed by new machine learning methods as well as association analysis on multiple accounts. AI, machine learning, and big data analytics developments have opened up a slew of new possibilities for addressing the aforementioned blockchain issues.

Literature Review

The core of marketing hasn't changed, but the way we communicate has changed marketing. It is morphing every day. That's where the big shift has happened. The art of storytelling is very much there but how we tell the story and the medium through which we tell the story is the key. The big changes that will happen in marketing, just as in business, is artificial intelligence and machine learning. – Sanjiv Mehta, CEO & MD of Hindustan Unilever Ltd. (Mehta, 2018).

It's not that difficult to argue that marketing in the future will make increasing use of AI. Even today, the components of an AI – based approach are largely in place. Contemporary marketing is increasingly quantitative, targeted, and tied to business outcomes. Ads and promotions are increasingly customized to individual consumers in real time. Companies employ multiple channels to get to customers, but all of them increasingly employ digital content. Company marketers still work with agencies, many of which have developed analytical capabilities of their own. - Thomas H. Davenport (Artificial Intelligence for Marketing by Jim Sterne, Page 18)

One of the most popular business applications in marketing is using mixed reality to offer a cost-effective way for customers to try a firm's products before buying (Scholz, 2018). For example, the IKEA Place app allows customers to drag and drop any piece of IKEA furniture fit to scale through the lens of a smartphone camera to see how the furniture would look in their own home (Dasey, 2017). A study by Gartner predicts that '100 million consumers will shop in augmented reality by 2020' (Pemberton, 2017).

Transformative Technologies and Marketing Practice

The research methodology used in the paper investigates the different aspects of the artificial intelligence marketing philosophy. This is a descriptive analysis in which examples are cited based on references from secondary sources and those from the author's own personal experiences. The study recommends a few steps that marketers should take to boost their marketing strategies. According to a report conducted earlier this year, businesses will increase their marketing budgets by an average of 80% over the next few years to keep up with the changes.

Transformative innovations have had and will continue to have a significant effect on marketing activities. In this part, we'll look at a few AI and blockchain marketing applications. A thorough analysis of all marketing applications is outside the reach of this article.

This is fantastic news for marketing teams, as they can now recruit top talent. Increased funding would enable marketing employees to stay longer and boost overall strategies. If you want to keep up with your rivals, you can review your marketing budget to see if an increase is necessary. The best thing you can do to keep your marketing department up to date and even ahead of the game in digital marketing is to include training in latest technical advances.

AI for Marketing

We live in an era where a marketer who does not incorporate artificial intelligence into his or her marketing strategy is still behind the times. Artificial intelligence is not only used to execute marketing campaigns, but it is often used to build them.

According to Facebook's artificial research scientists, artificial intelligence systems are going to be an extension to our brains the same way cars are extensions to our legs.

Sales, operations, customer service, and customer insights were the four key business fields where AI has the most immediate effect on marketing. A significant advantage of AI (over conventional statistical methods) comes from the superior ability of AI algorithms to 'learn' from large datasets (Grewal, 2018). According to a Capgemini study, '79% of organizations implementing AI generate new insights and better analysis' (Stancombe, 2017). Supervised learning techniques are being increasingly employed by marketing organizations to predict all aspects of customer behaviour including customer churn (Everett, 2018).

Unsupervised learning algorithms of AI also continue to be implemented across a wide range of marketing applications. State-of-the-art recommendation engines of companies such as Netflix and Amazon, search engine queries on Google, and advanced techniques to segment customers are all powered with unprecedented speed and precision by AI-based algorithms that employ unsupervised learning (McCracken, 2017); (Neapolitan, 2018). Firms can use unsupervised learning to identify anomalies in customer behaviour such as fraudulent and/or another outlier behaviour(Kose, 2017).

Blockchain for Marketing

Blockchain's potential to impact the practice of marketing lies in lever aging the ability of blockchain for verifying transactions, tracking ship ping, ensuring standards of production, security, targeting digital ads and reducing business operation costs (Conick, 2017). With the overall increase in digital consumption, both firms and consumers are susceptible to hacking and fraud. Blockchain's secure cryptography renders networks immune to hacking, thereby offering an ideal platform for sharing, storing and transferring confidential information (Zackiewicz, 2018). Currently, digital ad platforms like Google and Facebook run digital ads and report back ad metrics to the respective firms (running the ad campaigns). Blockchain technology may be used to verify ad delivery, assuring that it goes to the targeted customers and is not altered by click fraud, or bots, and is delivered at the most optimal frequency(Ghose, 2018).

Consequences for Consumers, Businesses, and Academic Research

AI and blockchain are two ground-breaking innovations that can radically alter marketing practises. As a consequence, the adoption would (or has) have significant consequences for customers and businesses.

Transformative technologies can provide greater value to customers in the form of (a) lower prices (as a result of cost reductions by the respective firm implementing transformative technologies to increase operating efficiencies), and (b) access to higher-quality products/services, courtesy of digital transformative technologies, (c) faster response times as a result of the streamlining/automation of operations like customer care and supply chain, and (d) a better experience as a result of technology-assisted improvements like augmented reality.

What effect will transformative technology have on customers and businesses? Firms assist in defining the research agenda for the future. We can see that, (a) Developing methodological improvements of machine learning algorithms for solving further marketing problems and/or enhancing marketing ROI, as well as developing explainable AI algorithms that may be of greater benefit to marketers, (b) evaluating creative ways to integrate blockchain technology with the ultimate goal of winning customer trust; and (c) experimenting with ground-breaking virtual reality technologies with the goal of improving consumer experience and interaction. are promising research areas.

Business Application of AI and Blockchain in Marketing

1. A way to change how marketing teams learn about their leads: AI now provides marketing teams with more information about their potential clients than it did previously. For example, the teams can now gain insight into the identity of their website users and quickly determine whether or not they are a good match for their goods. It may also be used to demonstrate potential applications for a product, and any product flaws that might exist.
2. It can help sales teams turn more leads: Sales teams can now use LeadBot to differentiate between website users who are likely to buy their goods and those who aren't. This smart certification process aids the sales team in closing leads produced by their marketing counterparts. This is a win-win situation for both sides.
3. It is always willing to assist: Helping is important in sales and marketing. People need someone who can respond to their questions quickly. The sales and marketing teams cannot afford a customer support team that is available 24 hours a day, seven days a

week to answer questions and respond to leads. AI provides an "intelligent assistant" that can answer questions within the shortest time possible and at all times of the day throughout the week.
4. It ensures that an advertising is delivered to the intended audience and that it is not over-served to ensure optimum frequency. Promotion contractors should verify that the ad caught the attention of a target user, demonstrating that their contractual duty was met.
5. It can check how target individuals react to advertising or the effectiveness of any advertisements delivered to them. Marketers may use ad networks like BitTeaser to help them achieve this.
6. Publishers, tech firms, agencies, contractors, and other stakeholders who need to be paid for the production, distribution, or output of ads or other services can use the technology.
7. Consumers that have indirect data, such as behavioural and psychographic data, may be compensated using blockchain technology.
8. Consumers who provide direct data, such as personally identifiable information, preferences, and purchasing plans, will be rewarded.
9. It encourages advertisers to be transparent about how they use customer data.
10. It provides customers with information on how advertisers use their data in aggregate.
11. It is beneficial when paying customers for the use of previously produced material, such as images or videos of a company.
12. It helps advertisers reward customers for contributing new content to their campaigns.
13. With minimal human interaction, blockchain can collect, search, store, and automatically update and verify databases. This is thought to change the way consumer insights are approached. Since it prioritises data-driven marketing, blockchain is the ideal underlying medium for generating ideas.

Digital Era Marketing Strategies

Because of the availability of assistive devices in today's world, many companies are thriving. Social networking is the most widely used form of technology in marketing. Social networking has proven to be a valuable tool in the creation of marketing strategies and is important for business growth. Not just because we are living in the modern age, but also because it is easy. With all of these emerging innovations, businesses must develop new marketing strategies to sell their products. A few of them are discussed further down.

Content Marketing: Because of its importance in social media, multimedia, and mobile search, content marketing has become a major focus for many brands. Many businesses are also unaware of the significance of trends and how content marketing underpins almost all forms of digital marketing. The importance of brand recognition cannot be overstated.

Mobile Marketing: Many people now use smart phones and tablets because they are convenient and time-saving because they can take them with them everywhere, they go and use them whenever they want. The ever-increasing number of people who own smartphones and tablets has made the availability of marketing content for mobile platforms a necessity. Businesses should update their websites to make them mobile-friendly.

Integrated digital marketing: Integrated marketing is essential to ensure that all marketing messaging and communications campaigns are consistent and focused on the consumer. For example, Google created Google + for a variety of purposes, one of which is to be able to see and capture social signals and patterns.

Continuous Marketing: One of the most common marketing tactics right now is to actively and repeatedly remind customers about the product. However, it is also important to strike a balance between online and offline product promotion.

Personalized Marketing: Because of media saturation, marketing via conventional media such as television becomes less successful. Personalized marketing is a modern marketing technique that has recently emerged. Person messages are read and crafted using computer software. Customers' actions will be read by the computer, which will then provide them with relevant information.

Visual Marketing: This technique can be implemented using Instagram, Pinterest, Slideshare, and other social media platforms. The ability to embed a marketing message and signal in an item or image is needed. This latest marketing trend is being used to increase digital marketing participation.

Conclusion

This article first reviews the blockchain technologies with AI and analysed the challenges in blockchain systems. The researcher then introduced opportunities brought by AI to blockchain systems and named such integration of blockchain and AI as blockchain intelligence.

We need to build one-on-one relationships with customers. It is the urgent need; it is what will allow us to thrive in the new world. The mind and heart are at the heart of marketing. It all comes down to intellect and emotion. We must not only have practical advantages, but we must also occupy emotional space in the minds of our customers.

Marketing has evolved as a result of the way we interact with customers. Every day, it changes, and that is where the major shift has occurred. Artificial intelligence and machine learning are driving major changes in marketing. It opens up new storytelling and marketing possibilities. People's interactions with information, technology, brands, and services will change as a result.

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Comprehending the Challenges faced by Mental Health Experts and NGO's in India

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ABSTRACT

Mental illness is one of our greatest worldwide challenges because it is the primary cause of disability. The size of the issue in India, a country with a diverse and rich culture, can seem daunting. Only 0.75 psychiatrists are available to treat every 100,000 patients in the world's second-most populous country, and the WHO estimates that the cost of mental illness would cost the global economy $1.03 trillion between 2012 and 2030. From 2022 to 2028, the India Mental Health Market is anticipated to expand at a significant CAGR of 15%. Studies indicate that India is becoming more aware of the reality and effects of mental health while responding with acceptance and openness, highlighting the importance of access and education. This mind-set, however, requires systemic backing. The aim of this exploratory quantitative research study is to get an overview of some challenges faced by experts and NGOs' in the Mental Health and wellness space.

Keywords: Mental wellness, Mental health, NGOs, challenges

Introduction

The reduction of persistent stigma, the improvement of the treatment and research capacity of the mental health system, the implementation of prevention programmes to lessen the incidence of mental disorders, and the establishment of sustainable scale-up public health systems to improve access to mental health treatment using evidence-based interventions are identified as the four priority areas for concentrated attention.

In the modern era, mental and drug use problems are the main contributors to disability worldwide. The fact that more than 70% of people who require mental health services do not have access to care globally is a contributing factor to the established global burden of disease linked to mental disorders. Ironically, this gap exists at a time when research has shown that evidence-based therapies for mental health are successful in settings with constrained resources. The efficacy and effectiveness of both psycho-pharmacological treatment and evidence-based psychotherapies for treating mental disorders have been shown in trials carried out in low- and middle-income countries (LMICs). The economic value of preventing and treating mental problems in these contexts is also being progressively highlighted by studies on the cost-effectiveness of mental health therapies. To improve mental health globally, the World Health Organization (WHO) established the Mental Health Gap Action Programme Intervention Guide (mhGAP-IG) through a comprehensive evaluation of the available research and an international participatory consultative process to assist close the global mental health (GMH) treatment gap.

There is compelling evidence that the lack of understanding about mental disease, as well as prejudice and discrimination against those who have mental illnesses, are factors that delay or prevent treatment for mental illnesses. As was seen above, there are still major obstacles to overcome in order to bridge the gap in mental health treatment and make considerable progress toward improving mental health internationally.

Mental disease stigma fuels a vicious circle of suffering and secrecy that results in recurrent rounds of stigma and discrimination, making it one of the biggest obstacles to closing the global treatment gap for mental illness. Low rehabilitation results and a poor quality of life are caused by social isolation, which is based on stigma. Numerous people are discouraged by stigma from getting treatment for mental illnesses when they are still in the early stages. Delays in seeking care due to stigma worsen the prognosis and support the myth that mental diseases are incurable. A widespread, pervasive stigma may also lower the status accorded to the mental health professions, deterring young people from choosing these specialties and worsening the labour crisis.

Literature Review

From 2022 to 2028, the India Mental Health Market is anticipated to expand at a significant CAGR of 15%. According to a 2017 Indian Council of Medical Research (ICMR) report, nearly one in seven persons suffer from mental disorders of varying severity in India. Depression and anxiety disorders were the most prevalent, affecting 45.7 million and 44.9 million people, respectively. Research shows nearly 19.7 crore people suffered from some form of mental disorder, including depression, anxiety disorders, schizophrenia, bipolar disorders, idiopathic developmental intellectual disability, conduct disorders and autism.(Dutta, Dec 2019).

The need for mental health care services is high. More than 13% of the global burden of disease is due to neuropsychiatric disorders, and almost three-quarters of this burden lies in low- and middle-income countries (LMICs). Neuropsychiatric disorders include mental disorders (such as unipolar and bipolar affective disorders, substance use and alcohol use disorders, schizophrenia, and dementia) and neurological disorders (such as epilepsy, migraine, multiple sclerosis, and Parkinson disease). We include both these types of disorders in our broad definition of global mental health. The burden of these disorders is projected to grow dramatically in the next decade, in part because of the demographic and epidemiological transitions in LMICs. However, between 76% and 84% of people with serious mental disorders (as defined by the World Health Organization [WHO] Composite International Diagnostic Instrument) in six LMICs in the World Mental Health Survey had not received treatment in the previous year, representing a considerable treatment gap. Where treatments are accessed, they often lack a clear evidence base and involve considerable out-of-pocket payments, which can lead to catastrophic health expenditures. Budgets and human resources provided by ministries of health (MoH) for mental health care remain woefully inadequate to address the treatment gap, particularly in LMICs (Lund, Tomlinson et al 2012).

There is a growing body of evidence testifying to both the efficacy of specific treatments for priority mental disorders in LMICs and their cost-effectiveness. This evidence has informed the policies of the WHO Mental Health Gap Action Programme (mhGAP), with its objective of scaling up services for mental, neurological, and substance use disorders. Alongside mhGAP, others have developed innovative intervention models, such as maternal mental health services in the context of routine maternal care, livelihoods interventions for people with severe mental illness, and mental health interventions in complex emergencies.

Research Methodology

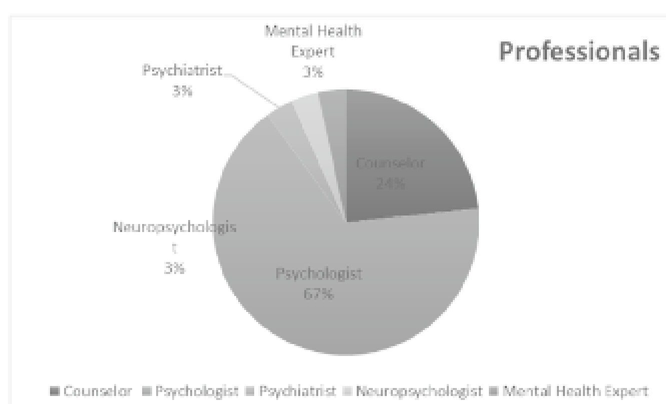
This research was undertaken primarily to understand some of the challenges faced by mental professionals and NGO's in the mental health and wellness space. Exploratory research is defined as a research used to investigate a problem which is not clearly defined. This research was conducted to have a better understanding of the existing problems.

A questionnaire was circulated to almost 100 to collect data from the predefined group of respondents (mental health professionals and NGO's in the mental health space). Sample size of 100 was targeted; however we received complete replies from 60 respondents. The quantitative data is presented as pie charts and bar graphs for clarity.

The literature review gave an overview of current knowledge on the research topic which allowed insights into current trends, opinions and the existing research in this domain.

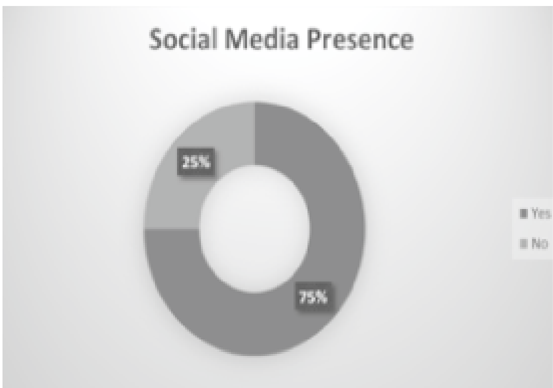
Data Analysis

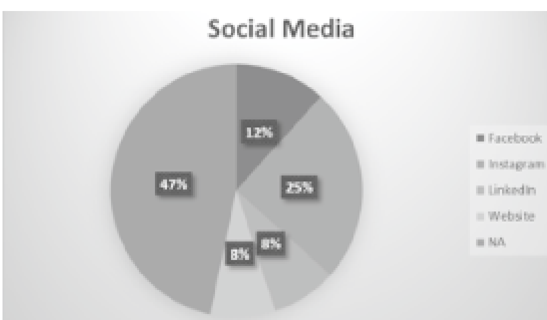
A. Professionals

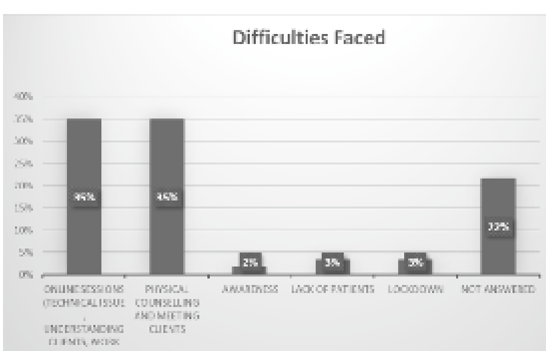


In research carried out, mostly responses recorded were from psychologists followed by counsellors. Also, responses were gathered from mental health experts, psychiatrists and neuropsychologists.

75 % of those professionals were active on social media, while some others choose not to be on social media at all. Most professionals prefer Instagram as a platform to showcase their profession and competence



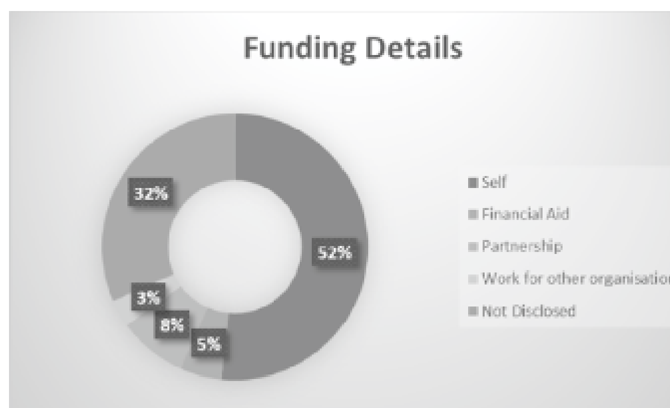




As per the data, the most common difficulties faced were online session and lack of physical counselling. Professionals believe that online sessions were not as effective as physical counselling. They found it difficult to understand patient's issues and could not connect properly with the patients. The other difficulties faced were awareness among patients, lockdown and lack of patients due to unawareness.

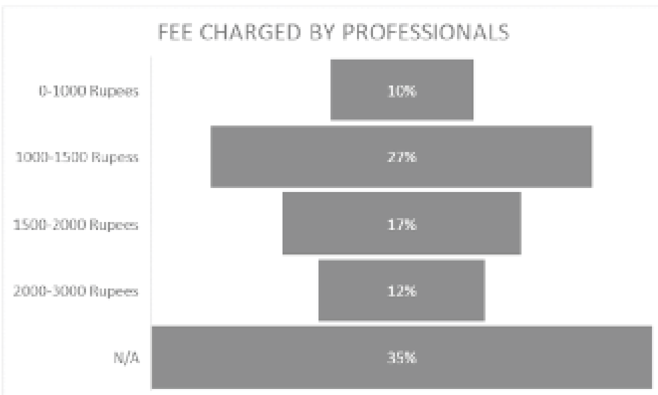
Considering above data, to tackle the issues faced, professionals undertook and found some solutions on it. Awareness campaigns were undertaken to create awareness among patients and to address the importance of taking mental health issues seriously. Also, to make people aware about professionals who are working on mental health.

They tried to create online sessions more effective by upgrading and using better technology.

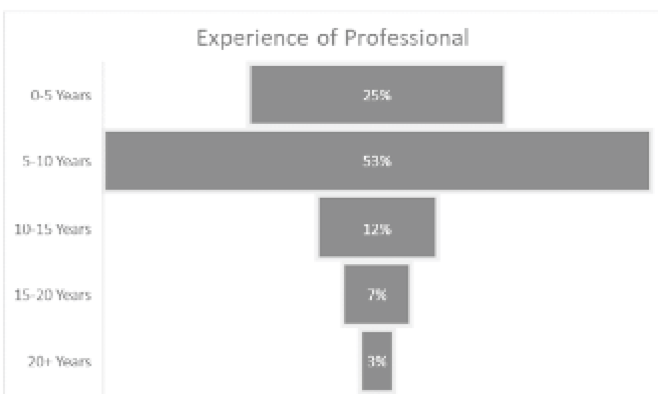


Above 50% self-funded their organisation. Also, some received financial aid, got into partnership. Some professionals choose to work for other organisations too.

The Strategies for marketing were mostly focused on digital marketing and advertising The Strategies for marketing were mostly focused on digital marketing and advertising through various channels. Online marketing gave an opportunity to address public at large. Other marketing strategies included conducting campaigns for spreading awareness.



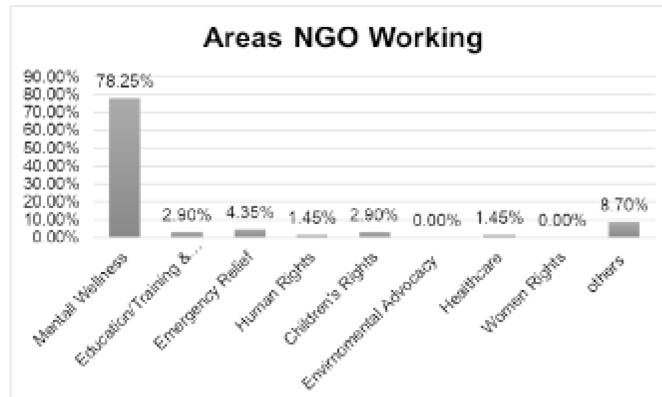
As we see the highest percent of fee charged is in the range of 1000-1500 Rupee and the most percent of people do not disclose their fee charges.



Professional with experience of 5-10 years were 53% followed by 25% with 0-5 years' experience. There were very less professionals having experience of more than 10 years.

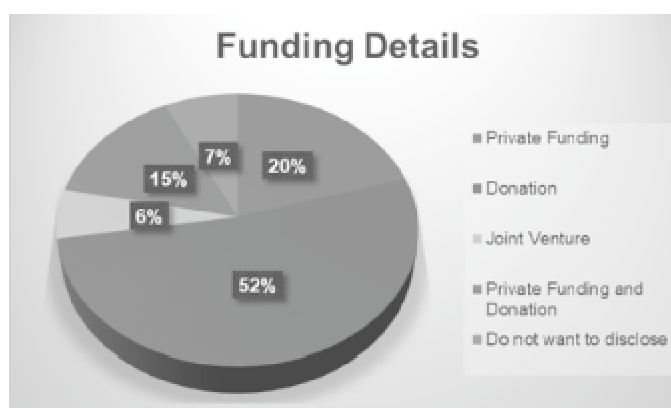
As the USP of professional with the highest percent of 25% says they have Expertise knowledge and after that 21.67% says their Experience is the USP with that 20% said using different techniques is their USP after that followed by Counselling, Clinical Specialist, Dealing in sensitive areas and others respectively.

B. NGO

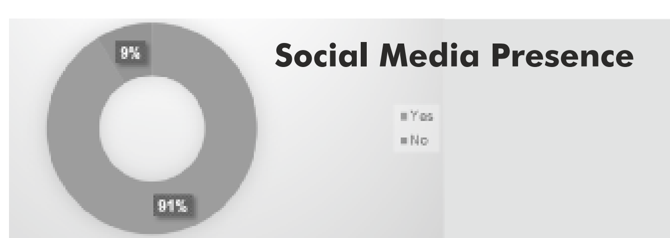


As from the survey we get majority of responses from NGOs who are working on mental wellness ares with 78.25% share of the responses. And remaining is break out between Eduacation training and development, Emergency relief, Human rights, Children rights, Helath care and others.

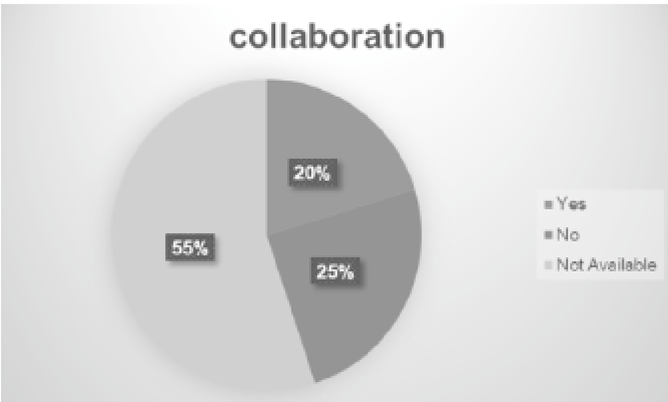
Majority of funding comes from donations followed by private funding from organizations.



Above 90% of NGOs are active on social media to create awareness and help people with their mental health issues.



Nowadays, majority of marketing is done through social media and digital marketing. Campaigns and seminars are run by NGOs for their Market and creating awareness. Word of mouth is also believed to be a source of marketing for NGOs.



20% of NGOs collaborate with hospitals and mental health professionals for working on mental health and solving issues.

Conclusion

According to a 2017 Indian Council of Medical Research (ICMR) report, nearly one in seven persons suffer from mental disorders of varying severity in India. Depression and anxiety disorders were the most prevalent, affecting 45.7 million and 44.9 million people, respectively.Even though mental health is now taken an epidemic proportion the attention given to this health domain seems scant. The number of professionals opting for mental health is not significant and hence there is a huge gap between demand and supply. Education and awareness regarding mental health problems and their treatment must also be extensive. The lack of access to necessary medications, which is particularly common in underdeveloped nations like ours, severely limits the ability to treat psychological problems, policies governing mental health care, access restrictions, and the cost of such services and mental health being ignored in almost all health policies is a major deterrent

Qualitative insights from discussions with professionals highlighted the following issues;

- Mental health has historically received less attention from state and central health planners, and this is evident in both the quantity and calibre of mental health services in India.
- Stigma, stigmatisation, and insufficient mental health care are common barriers to obtaining care.
- The lack of access to necessary medications, which is particularly common in underdeveloped nations, severely limits the ability to treat psychological problems. Policies governing mental health care, access restrictions, and the cost of such services.
- The paucity of mental health care specialists in low- and middle-income nations like India exacerbates this issue.
- The availability of community-based mental health treatment programmes is particularly uncommon in low-income nations.
- Additionally, many countries' insurance plans do not cover psychiatric problems, making mental health care pricey for many people.

A prominent and credible business report suggests; from 2022 to 2028, the India Mental Health Market is anticipated to expand at a significant CAGR of 15%.and hence its extremely important to pay attention to this domain as an expert or even as a budding sector of growth and opportunities.

NGO's in the Mental Health and Wellness space require adequate representation, training, support and funding through government initiatives as well as public private partnership

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A Study of the Impact of Merger and Acquisition on Financial Performance of Indian Companies

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ABSTRACT

The objective of this research to determine the effects of mergers and acquisitions on the financial performance of Indian acquiring company. Over the years, mergers and acquisitions have been the most widely used strategy for inorganic business expansion. It is frequently used to restructure companies. Companies engage in mergers and acquisitions for strategic business reasons, which are mostly financial in nature. This study makes an effort to assess the effects of the acquiring company's financial performance pre and post the acquisition. The performance of the companies was compared before and after the merger to see if there was any impact on their financial performance. This was done using a descriptive research approach. The acquirer company in selected M & A deals in India in periods 2016-2017 (As there is impact of Covid-19 in 2020) using select financial ratios and paired t test at 5% significance.

Keywords: Mergers, Acquisitions, financial performance, Descriptive research

Introduction:
Mergers and Acquisitions (M&As) have become an integral part of the corporate world, providing a range of opportunities for companies to expand their business operations, increase their market share, and improve their financial performance. The Indian business scenario has seen a considerable increase in the number of M&As over the last two decades, making it imperative to study the impact of these transactions on the financial performance of Indian companies. The purpose of this study is to examine the impact of M&As on the financial performance of Indian companies and to determine the factors that contribute to the success or failure of these transactions. The study will focus on various financial metrics, including profitability, liquidity, solvency, and growth, to evaluate the impact of M&As on the financial performance of Indian companies. This research will provide valuable insights into the M&A landscape in India and will contribute to the existing literature on M&As and their impact on financial performance.

Objective of the Study:
To study the impact of mergers & acquisitions on the acquirer's financial Performance.

Review of Literature:
Mergers and acquisitions have an impact on financial ratios in an organisation.

The global financial crisis is one of the main factors limiting the performance of Indian acquirer enterprises. long term study can be done to study the impact over a period of time. (Poddar, 2019) According to theories, mergers increase firm performance due to synergies gained, market dominance, increased profitability, and risk diversification. To determine if mergers increase financial performance before and after merging, a comparative analysis of the organization's performance during the pre- and post-merger periods was carried out. (Anthony1, 2017). A study on whether mergers increase value for shareholders in the Indian setting was conducted, and the results were noted as inconsistent. This encourages researchers to investigate whether there is a connection between mergers and the financial performance of target companies and whether, over time, they generate wealth for shareholders based on accounting studies. (Debi Prasad Satapathy, 2020). Operating performance of companies was better prior to merger and acquisition. In terms of return on shareholders, it was better prior to merger (Md Alam Ansari, 2018). To meet the study's purpose, secondary data from annual audited financial statements were obtained for the three years before and after the merger. Various financial ratios applied to assess the profitability and liquidity position (Bijoy Gupta, 2017).

This study, which used the variables return on assets, return on equity, earnings per share, and net profit margin, was conducted primarily to examine and analyse the effects of mergers and acquisitions on the financial performance of UK companies in 2011. The impact of various financial ratio considers independently and considering them as base conclusion is made (Momodou Sailou Jallow, 2017) .

The study comes to the conclusion that, for the acquiring corporations during the post-M&A phase, the financial performance of the Indian construction and real estate company has generally improved. According to the study, the construction industry backs the synergy theory, which claims that the resource consolidation that results from mergers and acquisitions will enhance synergy in the post-merger and acquisition phase. (Isha Gupta, 2021)

1. Introduction:

Consolidation of businesses is what is referred to as mergers and acquisitions (M & A). Between the two, mergers refer to the joining of two businesses. to create one, whereby Acquisitions is the taking over of one company by another. M & A is One of the key components of corporate finance. The concept of the usual explanation provided is that the two distinct businesses together create more value in comparison to taking a stand alone. With the primary goal of for the purpose of maximising wealth, businesses continually assess new prospects. by means of a merger or purchase. In this, synergy value can be determined by analysing the revenues (which will increase), expenses (which will decrease), or the cost of capital (lowering of overall cost of capital).

It seems to reason that both parties in an M&A transaction will have different opinions on the value of the target business: the seller wants to sell the business for as much money as possible, while the buyer will work to secure the lowest feasible price.

However, there are a lot of acceptable approaches of valuing businesses. Deal makers use a range of alternative techniques and tools to evaluate a target firm in addition to the most popular valuation method, which involves comparing it to similar businesses in the same industry.

2. Hypothesis:

H0: The financial performance of the chosen Acquirer company did not significantly change before or after the merger.

H1: The financial performance of the chosen Acquirer company significantly changed before or after the merger.

To verify hypothesis T-tests will be used to analyse how mergers affect the company's financial performance before and after the merger. The test's significance level will be set at 5%.

3. Data and Methodology:

Fundamental analysis can be helpful since it allows investors to identify whether an asset is reasonably priced, overpriced, or undervalued by comparing the security's underlying value to its market value. Technical analysis, in contrast, focuses on determining price movement and use several tools, including chart patterns and price trends, to accomplish so moneycontrol.com is where the data for the M & A for the acquirer company was obtained. Money control provides the ratios' data. Data from before and after the merger were compared on average across three years. Financial ratios are included in the statistics. The paired t test has also been used to statistically demonstrate that the merger has had an impact on the financial performance of the acquirer company post-merger. If the post-merger performance differs statistically from the pre-merger performance, this test will demonstrate that difference.

Tech Mahindra Acquire CJS Solution:

The acquisition would not only establish Tech Mahindra as a major participant in the healthcare provider market, but it will also give the company the chance to expand further by implementing Electronic Medical Records (EMR) and related services.

Dr Reddy's Labs acquires Imperial Credit:

The purchase was done for a price of Rs 2.05 crore, and it became final after receiving regulatory approvals. The Hyderabad-based pharmaceutical company informed BSE that it intended to use this company to carry out the captive financial activities of the group.

Unilever acquires Blueair:

For an undisclosed fee, Hindustan Unilever (HUL)'s parent company Unilever purchased Swedish business Blueair, a pioneer in mobile air purifying technology. With this agreement, Unilever enters the air purification market, a move that will strengthen its current water purification operations.

Aditya Birla acquires Forever 21:
Aditya Birla Fashion and Retail Ltd (ABFRL) in the first quarter of this financial year acquired Forever 21 from Diana Retail Pvt Ltd for $26 million. The company said that the acquisition would help the Group in becoming the largest integrated branded fashion player in the country.

HDFC Life merger with Max Life:
HDFC Chairman Deepak Parekh and Max Group Chairman Analjit Singh announced a deal merging their life insurance businesses to create what they said will eventually be India's largest listed life insurance. Under the three-step merger process, Max Life will first combine with its parent Max Financial Services Ltd. In the next stage, the insurance unit will be demerged from this entity into HDFC Life.

Selected Ratios:
Working Capital Ratio: The working capital ratio, like working capital, compares current assets to current liabilities and is a metric used to measure liquidity. The working capital ratio is calculated by dividing current assets by current liabilities.
Quick Ratio: The calculation for the quick ratio is current assets minus inventory minus prepaid expenses divided by current liabilities. The formula removes inventory because it can take time to sell and convert inventory into liquid assets.
Earnings per Share (EPS): The company's analysts calculate EPS by dividing net income by the weighted average number of common shares outstanding during the year.
Price-Earnings Ratio (P/E): To calculate the P/E ratio, divide a company's current stock price by earnings-per-share.
Debt-to-Equity Ratio: To calculate the debt-to-equity ratio, divide total liabilities by total shareholders' equity.
Return on Equity (ROE): (which is expressed as a percentage) is calculated by taking net income (income less expenses and taxes) figured before paying common share dividends and after paying preferred share dividends, and dividing the result by total shareholders' equity.

Paired t-test:
The mean difference between two sets of data is examined using the paired sample t-test to see if it is zero or not. It is possible to calculate the means of two samples, which can be data collected before and after an event, in order to determine if whether there is a difference between the data means. T-test is performed here. to understand how acquisitions affect a company's performance before to and following the merger.

For testing, there are two hypotheses: the null hypothesis and the alternative hypothesis. The alternative hypothesis will presume that the mean difference between the pre- and post-data is not equal to zero, whereas the null hypothesis will assume that there is no mean difference between the two. The test has a 5% level of significance.

4. Analysis and Findings:
In this study, Average data have been considered for analysis pre-merger and post-merger financial performance ratio of the Indian acquirer company in selected merger & acquisition deals in the period 2016-2017.

Table 1 Shows average three years data of ratio. To compare performance of the acquirer company pre-merger and post-merger, an average of three years selected financial ratios is calculated for each acquirer company.

Table 1 Financial Ratio

Name	WCR		QR		EPS		PE		D/E		ROE	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Tech Mahindra	2.46	2.16	2.36	2.3	64.07	41.21	15.6	14.99	0.046	0.076	24.98	19.48
Dr Reddy's Labs	2.16	2.27	1.4	1.07	125.8	84.05	859.71	882.38	0.39	0.35	21.87	10.65
Unilever	1.19	1.33	0.86	1.033	19.17	24.24	40.46	53.59	0.0167	0.0167	94.34	71.64
Aditya Birla	0.69	0.82	0.13	0.31	-15.4	2.12	0	253.13	2.3	1.52	36.5	12.9
HDFC Life	23.39	1.52	23.39	2.29	3.89	5.43	4.42	167.96	0	0	31.61	23.06

Descriptive Statistics:

Table 2 Descriptive Statistics

Ratio		N	Mean	S.D.	Std Error Mean
WCR	Pre	5	5.978	9.759	4.364
	post	5	1.62	0.601	0.269
QR	Pre	5	5.628	9.962	4.455
	post	5	1.4	0.87	0.389
EPS	Pre	5	39.588	56.382	25.215
	post	5	31.408	33.355	14.916
PE	Pre	5	184.038	378.038	169.063
	post	5	274.384	352.661	157.714
D/E	Pre	5	0.55	0.991	0.443
	post	5	0.392	0.645	0.288
ROE	Pre	5	41.86	29.885	13.365
	post	5	27.552	25.141	11.243

Paired Sample T-test:

Table 3 T-test

	Differences (Pre-post)			Interval				
Ratio	Mean	SD	Std Er.	Lower	Upper	T	DOF	P Value
WCR	4.358	9.158	4.095	-7.7995	16.5155	0.9953	4	0.3759
QR	4.225	9.091	4.065	-7.4869	15.9417	1.0019	4	0.3731
EPS	8.18	23.027	10.298	-21.3251	37.6851	0.7697	4	0.4844
PE	-90.346	25.37	50.314	-230.0388	49.3468	1.7957	4	0.147
D/E	0.158	0.345	0.156	-0.2748	0.5908	1.0135	4	0.3681
ROE	14.308	4.743	3.723	3.9711	24.6449	3.8431	4	0.0184

Hypothesis (WCR):

According to the table above, it illustrated the mean value of working capital ratio pre and post mergers and acquisition is 4.358, the T value as 0.9953 and the P (2- tailed) analysis value 0.3759, which is more than the level of significant 0.05. Furthermore, this outcome determines that WCR of companies does not have a significant impact between merger and acquisition activities. Null hypothesis accepted

Hypothesis (QR):

The mean value of quick ratio pre and post mergers and acquisition is 4.225, the T value as 1.0019 and the P (2- tailed) analysis value 0.3731, which is more than the level of significant 0.05. Furthermore, this outcome determines that Quick ratio of companies does not have a significant impact between merger and acquisition activities. Null hypothesis accepted.

Hypothesis (EPS):

The mean value of Earning per share pre and post mergers and acquisition is 8.18, the T value as 0.7697 and the P (2- tailed) analysis value 0.4844, which is more than the level of significant 0.05. Furthermore, this outcome determines that EPS of companies does not have a significant impact between merger and acquisition activities. Null hypothesis accepted.

Hypothesis (PE):

The mean value of Price earning ratio pre and post mergers and acquisition is -90.346, the T value as 1.7957 and the P (2- tailed) analysis value 0.147, which is more than the level of significant 0.05. Furthermore, this outcome determines that PE of companies does not have a significant impact between merger and acquisition activities. Null hypothesis accepted.

Hypothesis (D/E):
The mean value of Debt-to-equity pre and post mergers and acquisition is 0.158, the T value as 1.0135 and the P (2- tailed) analysis value 0.3681, which is more than the level of significant 0.05. Furthermore, this outcome determines that Debt to equity of companies does not have a significant impact between merger and acquisition activities. Null hypothesis accepted.

Hypothesis (ROE):
The mean value of Return on equity pre and post mergers and acquisition is 14.308, the T value as 3.8431 and the P (2- tailed) analysis value 0.0184, which is less than the level of significant 0.05. Furthermore, this outcome determines that ROE of companies have a significant impact between merger and acquisition activities. Null hypothesis rejected.

5. Conclusion:

The primary goal of this study was to evaluate and assess how mergers and acquisitions affect financial performance. The sample size of 5 companies that has undergone mergers and acquisitions in India. As a result, a discussion of the impact of the research objective's accomplishment is conducted in this part. The initial objective is to examine the impact of mergers and acquisitions on financial performance and by referring to the paired sample test, the results shows that the total mergers and acquired firms used in as sample size encounter does not have significant change in WCR, QR, EPS, PE, D/E before and after merger and acquisition but there is impact on ROE. From the above ration it may be conclude that ROE has significant impact on financial performance of companies.

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A Study of the Impact of Online Consumer Buying Behaviour on Offline Market while Purchasing White Goods

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ABSTRACT

The rise of e-commerce has transformed the way consumers shop for goods and services. In recent years, there has been a significant increase in online consumer buying behavior, with consumers turning to online channels to purchase white goods. This trend has had a significant impact on the offline market, and retailers who operate both online and offline need to adapt to the changing consumer behavior to remain competitive. The purpose of this research paper is to study the impact of online consumer buying behavior on offline market while purchasing white goods.

The study indicates that online consumer buying behavior has a significant impact on the offline market while purchasing white goods. Consumers who purchase white goods online are more likely to compare prices, read reviews and conduct research before making a purchase. They are also more likely to purchase from retailers who offer free delivery and easy returns.

Keywords: White Goods, eCommerce, Online Buying Behaviour, Offline Market

Introduction:

In today's era of 'Internet of things' and rapid development of technology, the consumers purchase path has become increasingly fragmented, blurring the lines between online and offline retailing. As in-store and online technologies are being unified, channel integration is key to a smooth and seamless consumer experience. Modern consumers are becoming increasingly impatient; they want to be able to shop anywhere, at any time and from the location of their choice. They demand personalised shopping journeys to suit their needs as they move around and across numerous channels in the online and offline paths.

Consumers and retailers are going through a tough and complex situation driven by technology. As they transit through this paradigm shift, the traditional linear path-to purchase has been replaced by modern consumer's checkered path-to-purchase. Now the shopping journey is across a multitude of channels from stores to connected devices, everything and all being interconnected. Consumers now are more technology savvy and price conscious, on one hand, most consumers own high-end mobile gadgets and on the other hand, they use a lot of online and offline channels which allow them to shop everywhere and anytime.

As boundaries between online and offline channels disintegrate, the world is turning into one big showroom. Consumer in-store and online experiences are being complimented by technology across the entire purchase route. Tablets and smart phones are becoming the universal tools for shopping, as it is easier for consumers to access information, compare prices and make purchases in-store or online. Depending on one's access to the internet and their competency in use of technology, social media is influencing, how consumers discover, try and buy. Online shopping is much easier and faster, consumers can find information about the product and its availability twenty-four hours a day seven days a week and get highly personalised offers and discounts.

Objectives:

1. To analyse consumer buying behavior in online and offline medium for different age groups.

2. To study the factors resisting customers for making online purchase decisions in white goods industry.

Literature Review:

A Study on Purchase Behavior of Consumer Durable

Goods with Special Reference to Tiruvarur District by P.Sathya and R.Indrajith. In this research special attention being given to the marketing strategies adopted by the manufacture for effective reach is also done. The various studies related to consumer behavior, rural market and urban market have been conducted by different social scientists at micro as well as macro level in India and abroad. The present study has covered the Consumer Behavior towards consumer durable goods.

Tolerance for Unethical Consumer Behaviour Provides a Key Insight to how People Behave as Consumers Worldwide by Emin Babakas, in this study, consumer reactions to unethical consumer behaviour and the USA. Nationality is found to be a significant predictor of how consumers view various questionable behaviours. Gender is not a significant predictor, while age and religious affiliation are found to be significant predictors of consumer ethical perceptions.

An Evaluation of Consumer Awareness in Rural Markets by Y Krishnan Naidu, this paper deals with the extent of awareness in rural markets of India. It presents the — Gold available in this steadily growing market which has been going great since the 1980's and now bigger than the urban market for both FMCG's and durables, the former with 53 per cent share and the latter with 59 per cent of total market.

Impact of Consumer Involvement on Buying Decision by R Sudarshan a Conceptual Framework. Consumer involvement refers to the intensity of interest with which consumers approach the market place. It is related to the consumers 'values and self-concept which influence the degree of personal importance ascribed to a product or situation consumer involvement varies Krishna across different individuals, product, brands and situations.

The Paradox of Progress - Inexperienced Consumers 'Choice of Major Household Appliances by AC Erasmus, in this paper the initial notion that limited consumer socialization may result in, and even necessitate inexperienced consumers 'reliance on surrogate indicators of quality, such as price, brand name and store image, as compensation for lack of appropriate product knowledge unfortunately the use of surrogate indicators of quality does not necessarily imply informed, responsible buyer behaviour.

Online consumer buying behavior has been extensively studied in the past few years, and there is a growing body of research on its impact on the offline market. According to a study by Forrester Research, online retail sales in the US are expected to reach $370 billion by 2017, representing a significant increase from the $231 billion recorded in 2013 (Forrester, 2014).

Research has also shown that consumers who purchase products online are more likely to conduct research before making a purchase, compare prices, and read reviews (Nielsen, 2015). The convenience and ease of shopping online have also contributed to the growth of online consumer buying behavior.

However, research has also shown that the majority of consumers still prefer to purchase white goods offline, mainly due to the need to see and touch the product before making a purchase (Nielsen, 2015). Retailers who operate both online and offline need to adapt to the changing consumer behavior to remain competitive in the market.

The white goods market has also seen a significant shift towards online buying behavior. According to a report by Statista, online sales of white goods in the US are expected to reach $18.5 billion by 2024 (Statista, 2021). The report also stated that the convenience and availability of products are the primary reasons for the shift towards online buying behavior in the white goods market.

Over the years as consumers adopt new ways to shop through different channels, businesses need to create synergies between their various sales channels to be able to serve their consumers Businesses need to update their strategies from time to time as they move from traditional channels to multichannel players, everything else in between and finally to Omni-channel players in the present times. This adoption has created efficiency and competitiveness, which is a must for both business and consumers in present economic conditions.

Omni-channel; the essence of the concept is that the consumer can use all the available online and offline sales channels in a seamless manner. Consumers today are not only connected twenty-four hours a day seven days a week but are also empowered. They prefer to shop at their convenience as they travel through various touch points. With the advent of online channels and ongoing digitalization, channels such as mobile and social media have influenced the way consumers behave through their search and acquisition patterns.

The demand for seamless channel integration has increased tremendously as consumers use many different channels to complete a single purchase transaction. Consumers are now more into show rooming, as they visit a shop or a stores website to check out products, but may end up buying them from another online store or retailer. This has forced retailers to transact with consumers across various channels, requiring consistent channel integration and creating a similar and positive experience throughout the whole process at various stages in a consumer's journey.

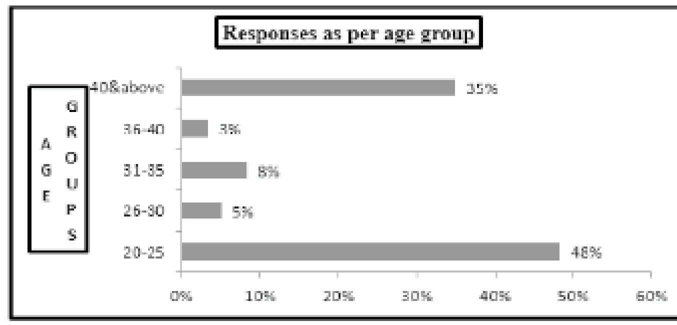
Retailing today requires careful integration of the entire range of available shopping channels both, online and offline. It requires all channels to work in a seamless manner in the buying process, from discovery to purchase both in-store and out. Going way beyond helping in-store consumers as they cross-shop on digital devices, in today's world though the number of channels are more but at the same time channel differentiation gets blurred as channel borders disintegrate and merge. These new channels not only break down old barriers of geography and consumer ignorance but at the same time, these channels can be used interchangeably through the search and purchase process to benefit the consumer in his journey.

Research Methodology:
A quantitative research design was used to gather data from consumers who have purchased white goods both online and offline. A survey questionnaire was developed and collected from 60 respondents. The data collected was on online consumer buying behavior, including factors that influence purchasing decisions, channels used to purchase white goods, and the impact of online purchasing behavior on offline market.

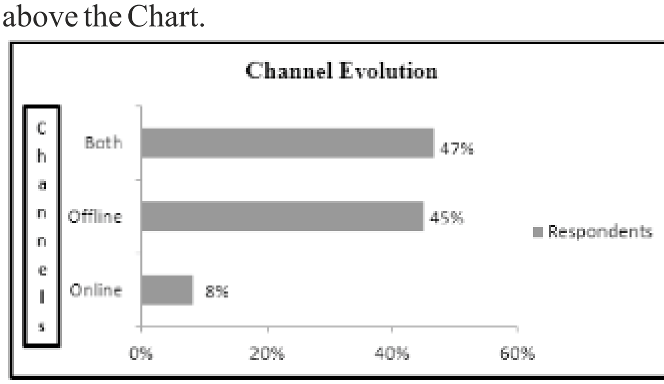
Hypothesis:
H_0: There is no significant impact of online consumer buying behavior on offline market while purchasing white goods.

H_A: There is a significant impact of online consumer buying behavior on offline market while purchasing white goods.

Age Groups
According to the survey results, the highest respondents were from age group of 20-25 which were 48 % (29), followed by 40& above which were 35 % (21). This shows that the survey was equally distributed among various age groups and targets all the age groups. The figure below shows the respondents as per age group.



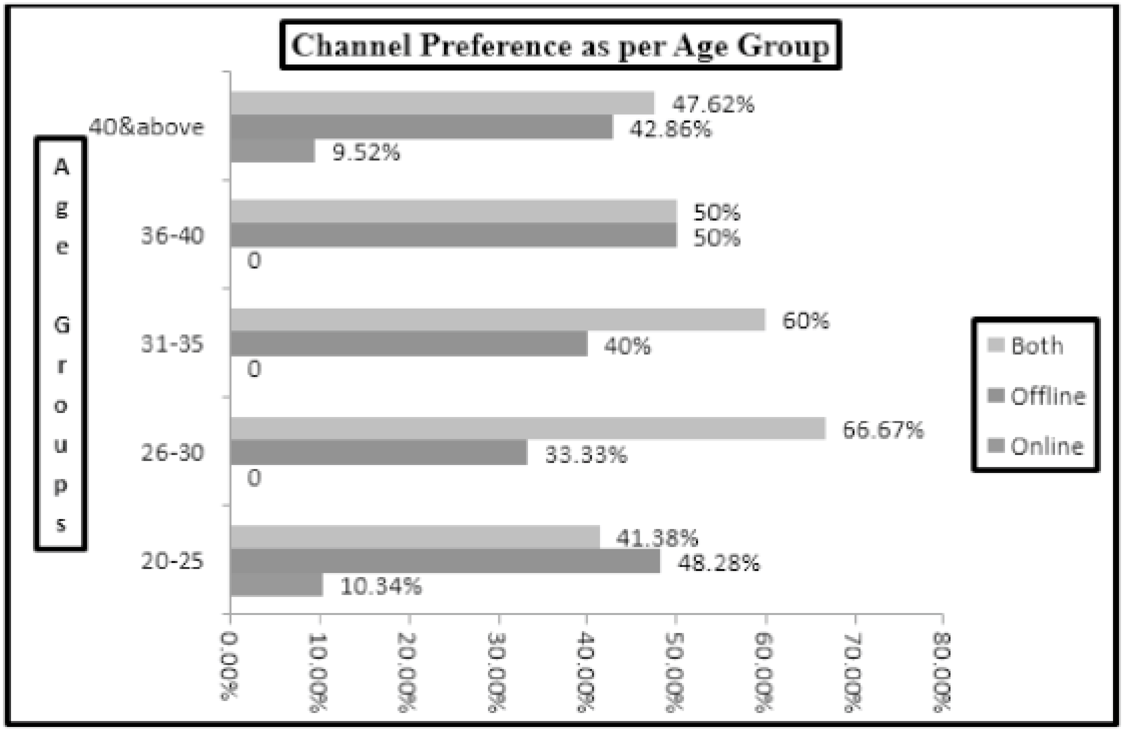
Channel Evolution
The respondents were asked about the kind of store they preferred to shop in. According to the replies received, 45% of the respondents preferred to shop in an offline store and 8% of the respondents preferred to shop online and 47% respondents preferred shopping from both. It was a clear indication that most the respondents preferred to shop from both offline and online and online channel has evolved as an option to shop for most of the buyers rather than only offline as it can be observed from figure below. It was surprising that the respondents preferred offline channels against online channels, as the majority of the surveyed population are of age group 20-25 as we saw in the above the Chart.



Channel preference as per Age groups
As per the survey, the detailed preference of channel, the respective age groups is given below in the figure. It is found that 48.28% of people between ages 20-25 are inclined towards shopping offline, which comes as a surprise as they prefer shopping online the most.

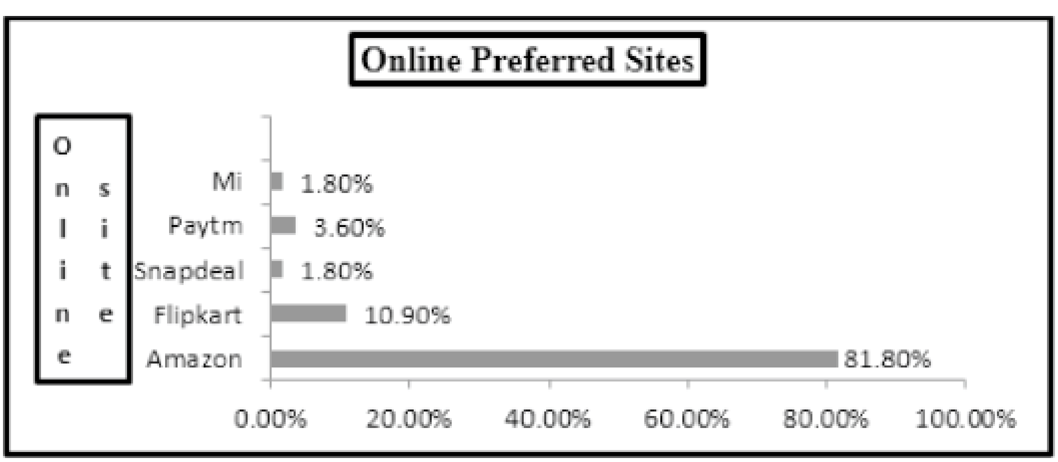
Further, it is found that 66.67% of people between age group 26-30 prefer shopping from both channels and rest 33.33 %shop from offline channels only. A 60% of people in age group 31-35 prefer both and rest 40% prefers offline only. A 50% of people prefer offline and rest 50% prefer both in age group 36-40.

A surprisingly 47.62% prefer both channels in age group 40& above. A 42.86% prefer offline only and rest 9.52% prefer online only in same age group. From the data we could say that people younger yet prefer to shop white goods offline whereas people older prefer both channels hence considering online shopping as one of the channels. Hence, we could see how the both channels have evolved with respect to different age groups.



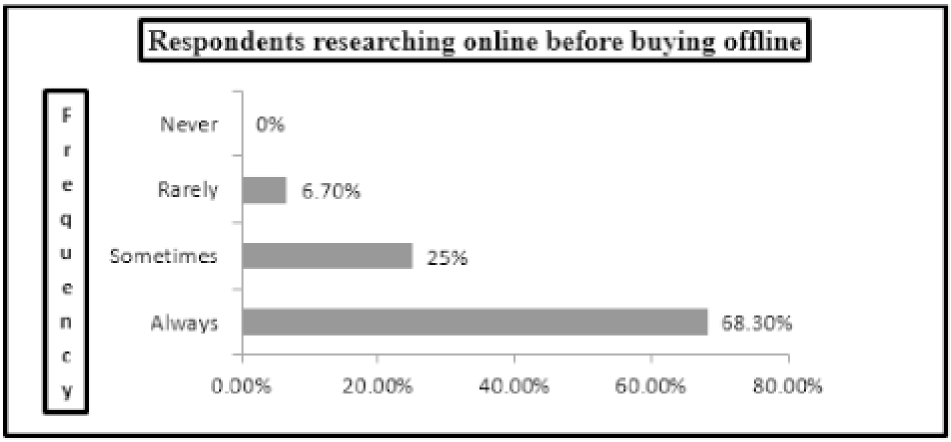
Online Preferred Sites

As the majority of the respondents preferred to shop from both online and offline channels, it was a clear indication that they had shopped online and hence the researcher tried to find out their preferred online site. In fact, when 55 respondents commented about their preferred online sites to shop white goods the results were as shown in the figure , 81.80% of the respondents shopped online from Amazon, followed by Flipkart with 10.90% of the respondents and further 7.3% of the respondents using various other sites such Snapdeal, Paytm and Mi. Hence, Amazon is the most preferred site for shopping White goods online.



Factors Influencing Consumer Channel Purchase Behavior

As it is evident from Charts, consumers today have access to different online tools and shop online and offline. At times, part of the consumers not only uses their online tools to shop but also do pre-shopping research. Other part of the consumers visits traditional stores to shop or to check out products. According to figure, 68.30% of the respondents always research products online but buy the product in a traditional store, 25% of the respondent's research sometimes and buy products in a traditional store, followed by 6.70% of the respondents who prefer to rarely research online and buy products offline. None of the respondents just go to traditional store without researching online. Hence, this reflects how online channels have affected the consumer buying behavior for purchasing products offline.

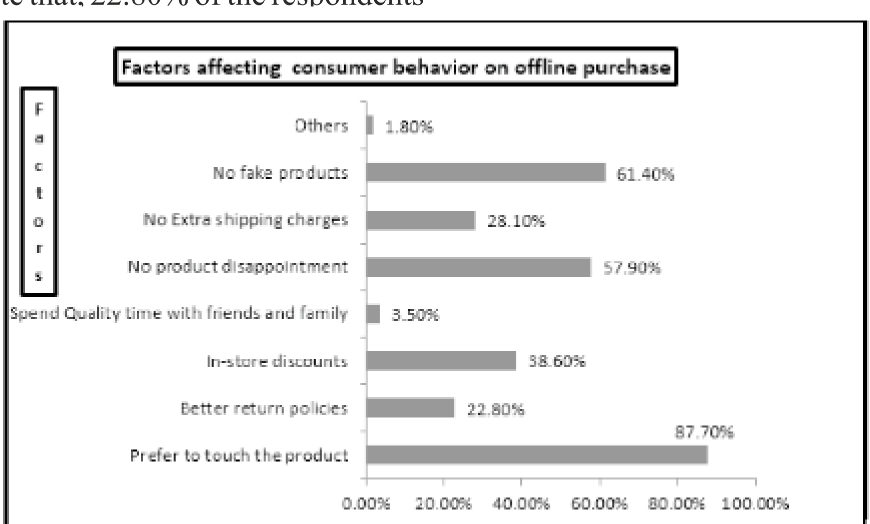


Factors Influencing Consumer Purchase Behavior in Offline Channel

The respondents were asked about the reasons behind their buying products in a traditional store. According to the survey results the majority 87.70% respondents agreed with the statement, 'I prefer to touch the product ' and 61.40 % of the respondents agreed with the statement, 'no fake products ' in store because I can check the originality of the product'.

According to figure, 57.90% of the respondents would like to visit a traditional store because they do not want any product disappointment that is what is shown in the picture and what original product looks like. It was a bit surprising to note that, 22.80% of the respondents said I prefer to buy in traditional stores so I can get better return policies when online sites are investing so much money just to make return policies easier and better.38.60% of the respondents agreed they buy offline because of in store discounts and 28.10% agreed because of no extra shipping charges.

It further suggested, 3.50% of the respondents were keen on spending quality time with family and friends hence preferred offline channel. Other factors such as urgency of the product were suggested by 1.80% of the respondents. Hence the top 3 reasons why consumers buy offline are "touch the product"," no fake products" and "no product disappointment".

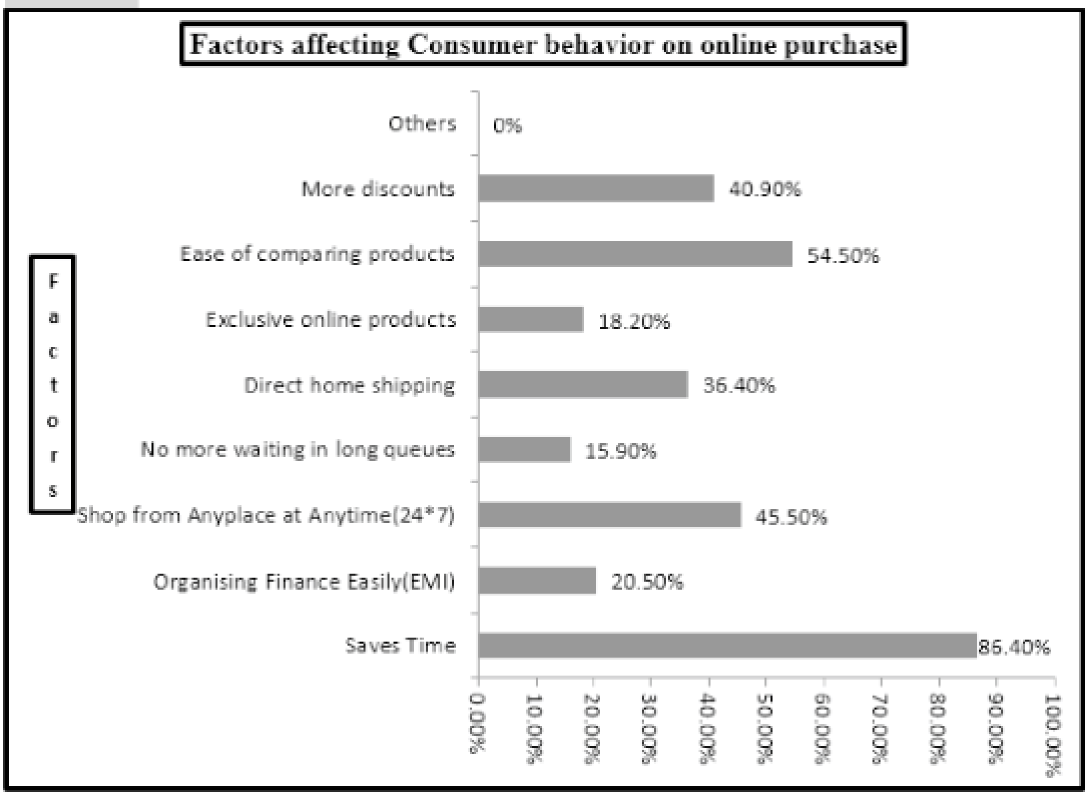


Factors Affecting Consumer Buying Behavior in Online Channel

The respondents were asked about the top 3 reasons about the factors concerning the reasons behind their buying products through online channel. According to the survey results the majority, that is 86.4% respondents agreed with the statement, 'I buy through online because it saves me time' and 54.50% of the respondents agreed with the statement, 'I buy through online because I can check and easily compare different products and compare their prices and features'.

According to figure, 45.50% of the respondents agreed that online shopping is convenient as let us shop at anytime from anyplace. 40.90% of respondents don't mind buying online as they think they get more discounts online. Further, 36.40% of the respondents say that, we buy through online so we can get direct shipping of products home.

20.50% of respondents prefer online because of EMI options and 18.20% buy online to get exclusive online products. About 15.90% respondents say that they shop online to jump the long queues in traditional stores. Hence the top 3 reasons why consumers prefer online over offline channel are 'saves time', 'ease of comparing products' and convenience to shop at anytime from anyplace'.

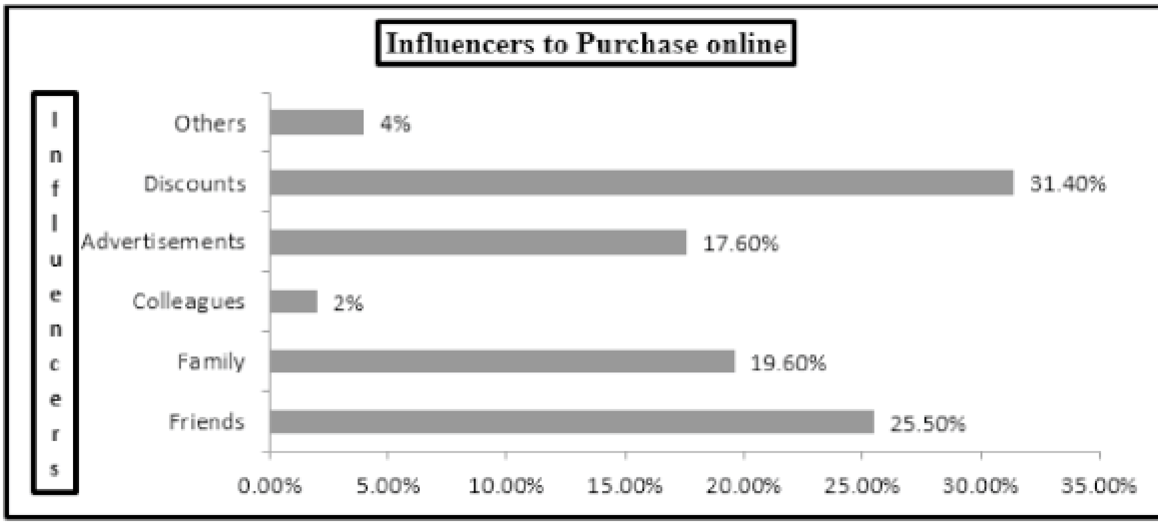


Influencers Who Influence Consumer Behavior to Purchase Online

According to the survey results, majority of respondents that is 31.4% get influenced to purchase online because of the attractive discounts provided by the online sites. Further, 25.5% said they get influenced by friends and they persuade them to buy white goods online if they have had a good experience.19.6% said that family members influence them to purchase online and surprisingly only 17.6% people said that advertisements influence them to purchase online. This comes as a surprise as online sites are spending a huge amount of funds on advertisements. Rest 6% is divided between colleagues at 2% and others at 4%.

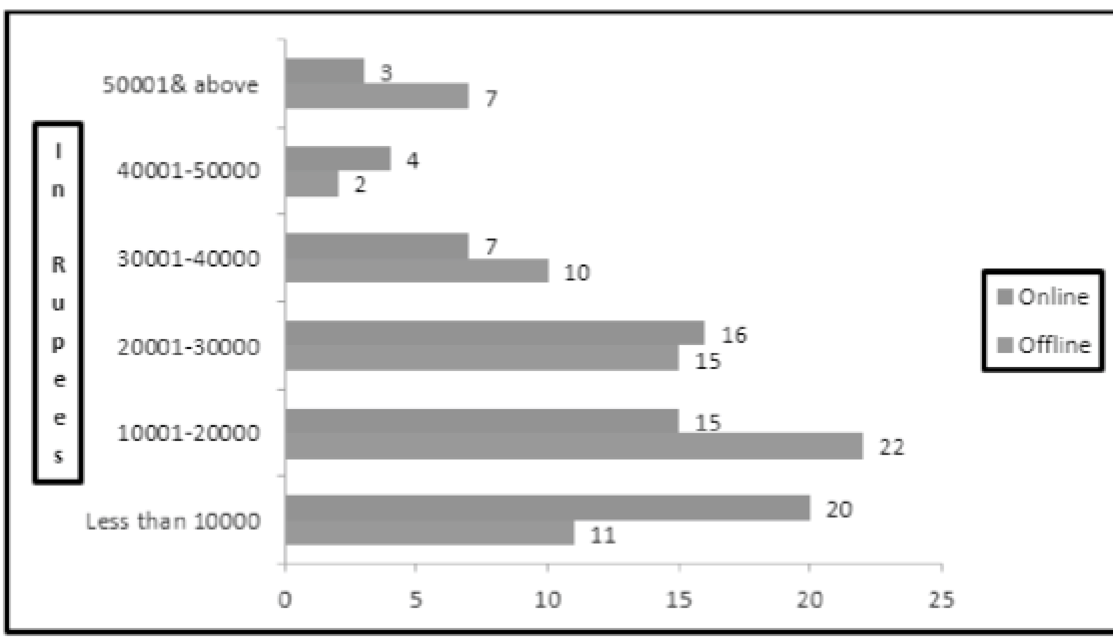
Hence here we could see that, discounts influences most people to purchase online and hence the online sites should prefer giving more discount and do influencer marketing rather than spending huge amount of money on advertisements.

The figure below shows the detail of the influencers influencing consumer online purchasing behavior.



Consumer Spending On Buying White Goods Respect to Different Buying Channels

As per the survey results we could see that people prefer to spend less than 10000 rupees while purchasing white goods online. Most people prefer to buy white goods between range of Rs10001-20000 and they prefer offline mode. As we could see in the graph below that the consumer purchasing behavior changes at every range, hence it is difficult to determine which channel is preferred depending on the price range. But from the graph we can assume that as the spending range rises people prefer to buy offline as they have a trust issue about the originality of the product as well as want to touch the product. People prefer to buy low valued white good online as the risk factor is less.



Findings:

The finding of the study show that most of the respondents preferred to shop from both offline and online and online channel has evolved as an option to shop for most of the buyers rather than only offline. It was surprising that the respondents preferred offline channels against online channels, as the majority of the surveyed population are of age group 20-25.

Younger consumers yet prefer to shop white goods offline whereas people older prefer both channels hence considering online shopping as one of the channels. Majority of the respondents always research products online but buy the product in a traditional store, some of the respondents research sometimes and buy products in a traditional store, followed by few of the respondents who prefer to rarely research online and buy products offline. None of the respondents just go to traditional store without researching online.

The study also found that Amazon is the most preferred site for shopping White goods online. As education levels are rising people are more aware about the online shopping channel and are considering online channel as a mode of shopping for white goods. Top 3 reasons why consumers buy offline are “touch the product”,” no fake products” and “no product disappointment”.

The top 3 reasons why consumers prefer online over offline channel are 'saves time', 'ease of comparing products' and convenience to shop at anytime from anyplace'. Discounts influences most people to purchase online and hence the online sites should prefer giving more discount and do influencer marketing rather than spending huge amount of money on advertisements.

Spending range rises people prefer to buy offline as they have a trust issue about the originality of the product as well as want to touch the product. People prefer to buy low valued white good online as the risk factor is less.

Conclusion:

The issue of consumer channel purchase behaviour is very complex and wide. The consumers purchase journey is increasingly fragmented, as online and offline channels are getting blurred due to the impact of technology. The findings in this research helped understand the consumers online and offline channel choice, its impact on the consumer purchase journey and the role of value dimensions. The study recommends that white goods retailers should integrate their online and offline channels to increase their sales and maintain their market share. By doing so, retailers can provide consumers with a seamless shopping experience that caters to their needs and preferences.

The research also reveals that the organisations need to focus and further strengthen their holistic onmichannels to build consumer confidence, so that consumers not only shop through online channels but the visibility and engagement of the consumers increase with the company.

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The Bridgital Innovation

Dr. Sangeeta Tandon - Director – MET – AMDC

'Bridgital Innovation' is a term divined by Mr. N. Chandrsekran and Ms. Roopa Purshothaman, the authors of the book on 'Bridgital Nation' wherein they state that "the future of work will be imagined, designed, tested and made in India." They add,"we have all the tools and we've already tested the waters. Lets dive in." So welcome to the world of 'Bridgital Innovation' that presents a blue print for facilitating accelerated multi-dimensional growth of our country by harnessing digital technologies and reimagining tasks and processes that can have magical results. India's development has come in an era of globalization and technology–driven change. Our economic growth is led by the services sector of information technology, finance and telecommunications rather than manufacturing as in the past.

As India grows into the third largest economy over the next decade, housing one-fourth of the global middle-class, a significant share of its population will still remain at the bottom of the pyramid. Today the access challenge puts basic services such as quality health, education and justice out of reach of millions of Indians. The shortages of all services are endemic because more and more people are jostling for the same limited resources. Addressing this challenge will mean shorter wait times, faster justice, better quality healthcare and education and will improve the quality of life.

India needs more of Innovation and Bridgital thinking that uses technology as an enabler, a tool to give the country what it needs most. AI, machine learning and the Cloud can be used with Bridgital approach to amplify India's existing resources and extend them to many more Indians. It must focus on technologies that augment and raise people's skills and boost a range of labour- intensive intermediate activities to take care of its vast unmet demand, ensuring that people and technology complement each other rather than substitute each other.

Bridgital innovation can provide new opportunities to meet the needs of small and medium businesses and even create business clusters while the entrepreneurship and Start-Ups can provide a meaningful route to paid work for secondary-educated women who aren't currently in the workforce. This is an opportunity to create a new category of digitally literate and intermediately skilled workers to act as a bridge to develop new markets so that new eco-systems can flourish around them. It is only through Bridgital Innovation and start-up culture that we can tap the vast underutilized human resource base and build the bridges between talent and productive work, using technology and foresight.

Bridgital innovation, in a world driven and shaped by technology can create a pathway for government, businesses, regulators, NGOs and everyday people to solve problems that were in the past, considered intractable. We must look beyond the concept of just a 'Smart City' rather imagine a 'Smart Nation' instead. We have rich examples of success within India like the Tata Group with 150 years history and work across India that can be replicated. The newer example is of the Corona Vaccines that India is today mass-producing and distributing over the world even for free to some of its neighbouring and poor countries, thereby bolstering its global image as the 'pharmacy of the world'.

In the Indian context, we can clearly see how technology can impact businesses and lifestyles. Take for example the digitization of systems, such as passport issuance and income tax filing that has made a significant impact on the public. Govt. Of India has introduced many apps to make life accessible and easy. To name a few, we have UMANG (unified Mobile Application for New-Age Governance that brings together various govt. Departments and their services on one platform, AAYKAR Setu for Income tax and Pancard, ePatshala for teachers and students, Krishi Kisan for new farming techniques, Khelo India for sports and fitness enthusiast Madad for Indian citizens abroad and start-Up India for entrepreneurs.

Thanks to human resilience and the ability to adapt there has been a universal open-mindedness to innovative solutions like WFH work from home culture during the pandemic. The education system is temporarily revamped with online learning solutions. Massive online open courses like MOOC and Coursera have made education accessible to anyone with the inclination and the internet connection. We now use smart phones for information, education and entertainment. Even the travel industry with P2P (peer to peer) accommodation companies like the Airbnb and Hipcamp have developed websites and apps and gained access to destinations one never dreamt of.

India's Smart Cities Mission and Tata Trusts have been offering cities the opportunity to build smart and sustainable urban infrastructure innovating their way into cities of the future. In Jabalpur, Madhya Pradesh, the CDO envisioned a new traffic system that automates e-challans through violation sensors. At Tumakuru, Karnataka, it was a refashioning of buses to include GPS tracking and sensors connected to a mobile application. In Chhattisgarh's Naya Raipur.. the chosen problem was maintaining an uninterrupted water supply by monitoring hydraulic parameters in case of outages...

In a first, the Indian Railways' Western Railway zone has introduced the Mobile Train Radio Communication(MTRC) system to aid safer and on-time travel. To track the movement of the vehicles carrying garbage and check whether they are disposing of waste daily, the New Town Kolkata Development Authority (NKDA) is planning to set up an Internet-of-Things (IoT)-enabled smart fencing for garbage disposal in Kolkata The Ministry of Mines has recently issued the National Non-Ferrous Metal Scrap Recycling Framework, 2020 covering key non-ferrous metals like aluminium, copper, zinc and lead with an objective to promote a formal and well-organised recycling ecosystem in the country. Work has already started on the world's largest and most ambitious multi stage Lift Irrigation Project at Kaleshweram in the Telangana district that will irrigate more than one lakh acres of drought area. Our culture is also fascinated by underdogs and overnight successes of start up companies and products or services that seem to rise out of nowhere and completely change their industries.

Technology, Talent and Vision can lay the foundation to close the gaps that matter most. We already have what it takes to leverage the strength once we tailor digital approaches and technologies to our needs. The scale and complexity of India's challenges is itself an opportunity. When we do crack these challenges, the solutions it devises will be relevant to many other societies and countries as well. So, let's hit at the root of the problems that hold India back and envision a different future.

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