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# SAARANSH

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### Aims & Scope

SAARANSH is an international bi-annual referred research journal published by Department of Management Studies (MBA), Ghaziabad. The objective of the journal is to provide a forum for discussion of advancement in the area of management. The journal publishes research papers, articles, book reviews & case studies. The journal invites manuscripts on all aspects of management and business environment.

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## FROM THE DESK OF THE EDITOR-IN-CHIEF

The present issue carries seven articles. The first study tries to examine the high potential of social marketing by the government for environment conservation especially climate change prevention. . It is an established fact that the most vulnerable group facing the ill effects of climate change is the young generation.

The second article discusses this rising importance of skills over formal qualifications, the factors fuel-lifting this change and the long-term impact on individuals and organizations who embrace this transition. Strategies for developing a skilled workforce, such as online courses, mentorship, on-the-job experience, and continuous learning, are also explored.

The third study utilizes various capital budgeting methodologies to evaluate the feasibility of two projects, Project A and Project B. Through a literature review and analysis of secondary data from the company's annual reports, the project assesses the investment decisions of GSFC Ltd

The fourth conceptual article aims to explore the interrelated nature of innovation and entrepreneurship and provide a comprehensive framework for understanding their dynamics and fostering success in these domains. By examining key theoretical perspectives and empirical evidence, this article presents a roadmap for individuals, organizations, and policymakers to nurture and harness the power of innovation and entrepreneurship in a rapidly changing world.

The ideas are presented in the fifth research paper after a thorough review of various secondary sources like websites, journals and reports. The paper endeavors to present the current trends in the market for HR automation and how they could be helpful to the organizations. In the post COVID era, firms followed the same pattern of digitalization with many people still working from home. Human resource managers completely relied on technology during the pandemic for various HR processes. The trend still continues with many firms adopting advanced HR digitalization tools to stay competitive in the market. These HR digitalization tools became one of the essentials for firms around the world

The sixth paper is a theoretical framework of evaluating digital marketing challenges & problems & associated solutions as well. The use of new technologies in businesses has made digital marketing more popular. It has completely changed the old ways of marketing and forced marketers to stay in touch with their purchaser or customers through the internet in order to sell their goods and services.

In seventh article it is revealed that in today's society, which is governed by technology and network connections, it is critical to understand what cyber security is and how to use it efficiently. If there is no security to secure it, systems, vital files, data, and other essential virtual items are at danger. Every company, whether it is an IT firm or not, must be safeguarded equally

Furthermore, I would like to extend my sincere gratitude to all the authors for contributing their knowledge and valuable support in the hopes of getting their continued support.

**-Dr. Vibhuti Tyagi**





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# Effects of Social Marketing by the Government of Madhya Pradesh on Engineering College Students to mitigate Climate Change and achieve Sustainable Development

Gorky Dubey\* and Dr. D.D. Bedia\*\*

## ABSTRACT

This research paper tries to examine the high potential of social marketing by the government for environment conservation especially climate change prevention. It is an established fact that the most vulnerable group facing the ill effects of climate change is the young generation. If the students are guided in the right direction from the initial phase, the results are seen in long run.

### Research Objective

The prime objective of this paper is to evaluate the level of consciousness developed in the engineering students of state of Madhya Pradesh, India due to the social marketing done by the state government for raising the awareness regarding the threats of climate change, the ways to mitigate it and achieve sustainable development.

### Methodology

The method of sample collection chosen is random sampling method. The students have been identified from 4 demographically different districts of Madhya Pradesh. Statistical z Test was used to validate the variables identified. Since it is a correlation type study, Pearson's correlation coefficient has been used to verify the status of awareness in the identified students and the outcomes have been shown in tabular form.

### Result

The results of the research study clearly depict that there persists a noteworthy relationship between the level of consciousness and the social marketing done by the government for the climate change mitigation. It is also seen that the overall awareness of all students can still be improved and that the female students are more conscious than male students about the climate change and attainment of sustainable development.

### Keywords

Social Marketing, Sustainable Development, Climate Change, Environmental Conservation, Madhya

Pradesh Government

### INTRODUCTION

As per the literature study done by the author, there is very less data available to understand the effectiveness of the social marketing strategies followed by the Government of Madhya Pradesh for the protection of climate against the anthropological effects and which states the level of awareness spread amongst the residents of Madhya Pradesh for avoiding or at least reducing the climate change and achieving the goal of sustainable development. These changes are extrapolated to surge from just a moderate level to very high level in the coming centuries. It is imperative to study the current situation of the awareness of these young minds because they are an important and a large section of society which will become either the decision makers in future or become a partner in decision making in some or the other way. Along with this the students can help spread awareness in many people simultaneously.

### Social marketing

The idea of social-marketing utilizes the usual commercial marketing techniques for bringing about a change in the society. The main target of commercial marketing is always the customer, his needs aspirations and likings. On the other hand social marketing uses all the techniques followed in commercial marketing to encourage the society to build a specific kind of behavior which focuses on its betterment and not of the institution which performs social marketing.

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Usually, social marketing often highlights the global effects caused by climate change such as global warming, the rise in level of sea and the daily rise in temperature. The government rather needs to emphasize the threats which are local in nature and to which the community can relate to. Past researches have shown us that social marketing which emphasizes on the local issues and individual threads of climate change are definitely effective than highlighting the issues faced by the global population.

Most of the scientific community, the policy makers including the government and the public at large, has since long time promoted the theory of losses. Government highlights the losses we have to face today by high taxes or diminishing the use of energy. But, our society has altogether a different perception for gain and for loss. The society has a tendency to be inclined towards the gain instead of being conscious about the loss. People tend to avoid doing anything contrary to the societal customs. It means that people do not act when the loss is highlighted with precariousness, i.e., people are careless about some future loss due to negative impacts of climate change. While on the contrary, if the government highlights the gains that can be achieved if we act together at this very moment, it definitely contributes to the progress of social marketing strategies by encouraging the society.

### Effects of Climate Change

Effects of climate change include the following- rise in air pollution, the intensification of storms, the extreme heat, the change in everyday temperature, growing variations in climate, high amount of rainfall in few areas, while the rest of the areas face drought, and recurrent stark changes in weather conditions, deterioration in human health in the form of dehydration, severe asthenia, along with strokes, exhaustion, pulmonary diseases which include asthmatic symptoms, allergy related to pollen grains, cardiac illness, and at times diabetic symptoms arise in patients.

It is believed that the threats caused by climate change are to affect the people residing in far off places and in the distant future. The researcher argues that emphasis must be on the fact that the effects of climate change have already started taking place in the city where one resides that too today and their effects will be exponentially snowballing day by day.

Below flowchart shows the achievement of sustainable development through social marketing.



Figure 1: Use of Social Marketing to attain Sustainable Development

### ENVIRONMENTAL PLANNING & COORDINATION ORGANIZATION (EPCO)

The Environmental Planning & Coordination Organization (EPCO) was established by the Housing and Environment Department under the Madhya Pradesh Government in the year 1981. It currently falls under the purview of Urban Growth and Environment Department of the MP Government. When the talk about environment conservation comes into picture, EPCO is famed as the premier organization in the state. The state government works in close consultation of EPCO for formulation of policy matters, numerous projects and programs of social marketing. It can be termed as the state think-tank for environment domain.

In the past three decades, the organization has worked on almost all domains related to environment in the state. It conducts various programs for the social marketing for the state government in terms of climate change mitigation, building a pro-environment behavior and spreading mindfulness amongst all sections of the general public.

### LITERATURE REVIEW

In commercial marketing the main focus of the marketer is always on increasing the sale of the product or service. On the front side of the coin, the prime focus of social marketing is to bring change in the behavior of the stakeholders of society. On the second side of the picture, commercial marketing practices are solely financial in nature but on the other hand social marketing is always for the benefit of society (Levy and Egan, 2002).

During the phase of Kyoto Protocol, several big multinational companies inclined towards giving more effort and finance to influence through a series of business organizations, their government's position to arrive to a multilateral climate treaty and norms and policies to reduce emission (Ikwue and Skia, 1994;



Kolk, 2001; Levy, 1997; Newell and Paterson, 1997).

Kotler and Karen(1981) have stated that the main objective of social marketer forever remains different from the other domains of marketing.

Ritson and Elliott(1995) stated that the perception of the society suggests us that positive social marketing must be encouraged instead of highlighting the prospective losses.

Gupta (1981) tried evaluating aspects of environment at the primary school level in both urban and rural areas and the measures for improvement were suggested.

Manmohan Singh (1984) in his study about environment consciousness in the students of Gujarat, recommends that the environment awareness is seen in proportion excluding he girls belonging to higher socio- economic status and of the coastal area.

Andrews and Frank (1993) have highlighted the connection between society and marketing. Marketing fosters promising perceptions of smoking of cigarette and contributes to smoking of cigarette amongst the society. This is the effect of negative social marketing.

Leftridge (1978) in his study about environment related knowledge of students in cities and rural areas found that the knowledge of students in the village or countryside areas is higher than that of cities.

Manuel (1961) tried evaluating few models of objective-oriented education for environmental protection in multiple countries. His focus was to develop a systemic tool of environment education for primary classes, in comparison with that of Britain, Russia, Germany, etc.

Perkes (1976) evaluated the response and attitude of primary level school and higher secondary school of more than 8 States of the US. He discovered that boys' knowledge was more than that of girls.

### **Discussion on Literature Review**

The literature review gives the following outcomes:

1. There is a high prospective of social marketing to change the habits and behavior of the target population.
2. The involvement of the population in the decision making process for the social marketing strategies is imperative.
3. The government must identify and adopt the best available methods of social marketing techniques which encourage the society for building a pro-environment behavior.
4. Studies related to Madhya Pradesh are very less and hence the selected research study is viable.

### **OBJECTIVE AND SIGNIFICANCE OF THE CURRENT STUDY**

The main objectives of this research study are

1. To evaluate the social marketing strategies followed by the Government of Madhya Pradesh for mitigation of climate change and achievement of sustainable development.
2. The level of awareness of the students of various engineering colleges of Madhya Pradesh on the basis of a detailed questionnaire.
3. To provide useful solutions to promote social marketing within the state that might be supportive to the governments of other states of India.

### **RESEARCH METHODOLOGY**

Since the present research study tries to investigate the relationship between the social marketing techniques conducted by the Madhya Pradesh Government and the response by the students of engineering colleges of Madhya Pradesh, this research is of Correlation type. For the purpose of conducting this research, the total count of the respondents selected was 764 students. Out of the 764 respondents, the total count of male students was 386 and that of female students was 378. The students were chosen employing the random sampling method. Below 4 cities were recognized for selecting the samples-

1. Bhopal
2. Indore
3. Jabalpur
4. Ujjain

These cities have a vast variation in the demography and are distant from each other. Even though the state is same, but the culture in these cities is different, for example, Ujjain is a religious city, known for its temples and the Simhasth Mela which occurs every 12 years. Indore is the financial hub of the state and the center of economic growth of the state. It is the epicenter of growth and development in the sense that Metro train is being constructed in this city. Big information technology companies employing the young engineering minds of the nearby engineering colleges are present in this city. Bhopal is the one of the largest city of the state, where the most of the government personnel reside. Jabalpur has the advantage of being geographically distant from these cities.

### **The Questionnaire and the Scaling Method**

A well-framed questionnaire was designed for conducting the research taking care that it is easily understood by the students. The questionnaire



developed comprised of following parts:

1. It comprises of 20 questions with the help of which the assessment of the level of consciousness of the students could be done.
2. It contains the questions about the steps taken at organizational level and individual level for mitigation of climate change and attainment of sustainable development.
3. The risks and vulnerabilities possessed by environmental degradation and negative effects of climate change have been included in the questions.
4. The questions have been framed in easily understandable language to identify the response of the students towards the social marketing strategies done by the government.

The assessment of the responses thus collected from the engineering students was done employing a 5-Point Likert Scale. The responses available in the questionnaire developed according to the scale were as below:

1. Totally aware
2. Very much aware
3. Reasonably aware
4. Less aware
5. Not at all aware

The questionnaire had such questions which could highlight vastly varied information related to numerous dimensions which are of individual, domestic and global concern. Below dimensions were highlighted in the questionnaire to stimulate the respondents' level of consciousness with respect to sustainable development and climate change mitigation:

1. Are you aware about the general issues of climate change?
2. Are you aware about the Sustainable Development Goals of the United Nations and India's role in achieving them?
3. Are you aware about The Environmental Planning & Coordination Organization (EPCO) under the Urban Development and Environment Department of the Government of Madhya Pradesh?
4. Are you aware about the conservation of biodiversity and the steps we should follow to conserve it?
5. Are you aware about the harmful effects of manufacturing industry?

6. Are you aware about the kind of steps that must be taken for reduction of carbon footprint?
7. Are you aware about the benefits of using renewable resources of energy?
8. Are you aware about the installation of solar plant at household level for electricity generation and that electricity can be sold to grid with reduction of electricity bill?
9. Are you aware about the harmful effects of usage of coal, oil and gas to generate electricity?
10. Are you aware that natural disasters like drought and storms are caused due to climate change?
11. Are you aware about vermicomposting and yard waste composting at household level and that the Municipal Corporation provides free guidance under Solid Waste Management, Rules 2016 of Swachh Bharat Mission for making compost?
12. Are you aware about global warming and the risks associated with it?
13. Are you aware about the threat to human health caused by the depletion of ozone layer?
14. Are you aware about deforestation and the benefits of planting trees?
15. Are you aware about the negative effects of using individual mode of transport?
16. Are you aware about the benefits of using public transport and cycling?
17. Are you aware about the increasingly intensive agriculture and the emission of green house gases like methane and nitrous oxideis caused by it?
18. Are you aware about the importance of water for life and its scarcity which we will face in future?
19. Are you aware about the benefits of water harvesting and how it is done at household level?
20. Are you aware about the societal contribution at every stage from individual, family, institutional, national and global level for growth of sustainability?

## DATAANALYSIS

Since the onset of SARS-CoV-2 or Covid 19 pandemic,

all the colleges have adopted the virtual mode of classes through Video Conferencing. Therefore, the professors of the engineering colleges were requested to collect the data of all the students during the online classes. After the data was collated, it was analyzed by employing the statistical software SPSS 20 version in which zTest was used by the researcher to validate the responses collected from the students. The data collected was analyzed by the researcher for consistency and validity.

After this Pearson's correlation coefficient was used to verify the level of consciousness amongst the engineering students for the social marketing campaigns and the policy of the state government to attain sustainable development.

Following observations have been recorded and exhibited in tabular form:

below shows the difference of means between multiple variables collected from the sample respondents which were evaluated with the use of twotailed z test with unequal means for the students of I year.

Variables	Group	Mean	Standard Deviation	z Test Score	Level of Significance
1	Male	14.64	0.78	6.31	0.002
	Female	13.51	1.38		
2	Male	11.52	1.58	1.86	No Significance
	Female	11.94	1.43		
3	Male	12.34	1.11	1.85	No Significance
	Female	11.82	1.38		
4	Male	14.22	1.26	3.68	0.002
	Female	12.88	1.98		
5	Male	13.62	1.23	0.47	No Significance
	Female	13.48	1.47		
6	Male	13.94	1.42	0.618	No Significance
	Female	13.74	1.81		
7	Male	15.72	1.23	0.868	No Significance
	Female	15.52	1.63		
8	Male	12.96	1.36	0.355	No Significance
	Female	13.06	1.37		
9	Male	14.02	1.23	2.208	0.5
	Female	12.36	1.93		
10	Male	14.08	1.46	1.87	No Significance
	Female	13.52	1.73		
11	Male	12.28	1.51	0.502	No Significance
	Female	12.12	2.06		
12	Male	14.06	1.31	1.18	No Significance
	Female	13.61	2.01		
13	Male	13.82	1.26	0.217	No Significance
	Female	13.86	1.67		
14	Male	13.92	1.72	1.08	No Significance
	Female	13.12	2.01		
15	Male	13.12	1.37	1.38	No Significance
	Female	13.54	1.73		
16	Male	13.16	1.72	1.12	No Significance
	Female	13.28	2.11		
17	Male	14.04	1.59	0.945	No Significance
	Female	13.16	2.11		
18	Male	13.18	1.41	0.815	No Significance
	Female	13.84	1.75		
19	Male	13.17	1.62	1.37	No Significance
	Female	13.99	1.75		
20	Male	13.92	1.13	0.38	No Significance
	Female	13.84	1.39		

**Table 1: I Year Engineering Students**

**Table 2** below exhibits the difference of means between multiple variables collected from the sample respondents which were evaluated with the use of two-tailed z test with unequal means for the students of II year of the identified engineering colleges.

Variables	Group	Mean	Standard Deviation	z Test Score	Level of Significance
1	Male	16.53	0.89	3.87	0.001
	Female	13.13	1.14		
2	Male	12.03	1.22	1.27	No Significance
	Female	12.31	1.16		
3	Male	11.46	0.97	2.32	0.5
	Female	11.84	1.14		
4	Male	13.36	0.95	1.37	No Significance
	Female	13.63	1.36		
5	Male	13.53	1.27	1.12	No Significance
	Female	13.82	1.17		
6	Male	12.62	0.78	1.44	No Significance
	Female	12.88	1.19		
7	Male	15.16	0.88	3.11	0.01
	Female	15.77	1.04		
8	Male	13.42	0.89	0.89	No Significance
	Female	13.23	1.17		
9	Male	13.33	0.84	2.39	0.5
	Female	13.78	1.18		
10	Male	13.13	1.07	3.48	0.01
	Female	13.82	1.09		
11	Male	12.74	0.73	0.96	No Significance
	Female	12.93	1.07		
12	Male	13.77	1.26	1.44	No Significance
	Female	14.03	0.97		
13	Male	12.78	1.28	4.16	0.001
	Female	13.63	1.32		
14	Male	13.17	1.63	1.08	No Significance
	Female	13.47	0.88		
15	Male	13.07	1.13	1.07	No Significance
	Female	13.28	1.15		
16	Male	13.76	0.98	2.82	0.5
	Female	13.94	1.37		
17	Male	13.87	1.16	1.87	No Significance
	Female	13.99	0.86		
18	Male	13.01	1.73	1.93	No Significance
	Female	13.45	0.98		
19	Male	13.63	1.23	1.74	No Significance
	Female	13.26	1.55		
20	Male	13.75	1.96	2.75	0.05
	Female	12.19	1.24		

**Table 2: II Year Engineering Students**

**Table 3** below shows the difference of means between multiple variables collected from the sample respondents which were evaluated with the use of two-





tailed z test with unequal means for the students of III year.

Variables	Group	Mean	Standard Deviation	z Test Score	Level of Significance
1	Male	14.37	0.96	4.63	0.001
	Female	13.31	1.39		
2	Male	13.42	1.48	1.86	No Significance
	Female	12.78	1.58		
3	Male	12.32	1.11	1.85	No Significance
	Female	11.81	1.38		
4	Male	13.96	1.45	2.65	0.01
	Female	13.01	2.02		
5	Male	13.56	1.43	0.08	No Significance
	Female	13.58	1.35		
6	Male	13.17	1.42	2.22	0.05
	Female	12.53	1.83		
7	Male	15.83	1.28	1.78	No Significance
	Female	15.29	1.59		
8	Male	13.39	1.26	2.23	0.05
	Female	12.79	1.39		
9	Male	13.93	1.48	2.24	0.05
	Female	13.22	1.87		
10	Male	14.09	1.57	2.11	0.05
	Female	13.47	1.66		
11	Male	12.49	1.43	1.89	No Significance
	Female	11.79	2.33		
12	Male	14.17	1.66	1.87	No Significance
	Female	13.59	1.67		
13	Male	13.94	1.33	0.68	No Significance
	Female	13.74	1.69		
14	Male	13.95	1.82	1.43	No Significance
	Female	13.42	1.93		
15	Male	13.52	1.46	0.34	No Significance
	Female	13.43	1.69		
16	Male	13.96	1.47	0.87	No Significance
	Female	13.28	1.56		
17	Male	14.47	0.99	2.83	0.001
	Female	13.51	1.48		
18	Male	13.74	1.52	1.25	No Significance
	Female	13.56	1.63		
19	Male	13.76	0.95	1.87	No Significance
	Female	13.73	1.36		
20	Male	13.45	1.22	1.62	No Significance
	Female	13.63	1.57		

**Table 3: III Year Engineering Students**

Table 4 below exhibits the difference of means between multiple variables collected from the sample

respondents which were evaluated with the use of two-tailed z test with unequal means for the students of IV year.

Variables	Group	Mean	Standard Deviation	z Test Score	Level of Significance
1	Male	16.44	0.76	4.37	0.002
	Female	15.74	1.86		
2	Male	13.51	1.58	1.56	No Significance
	Female	12.54	1.57		
3	Male	12.36	1.14	1.73	No Significance
	Female	11.87	1.48		
4	Male	14.23	1.23	3.48	0.002
	Female	12.87	1.99		
5	Male	13.42	0.58	1.14	No Significance
	Female	13.28	1.89		
6	Male	13.26	0.68	3.13	0.01
	Female	13.47	1.02		
7	Male	16.86	1.45	0.77	No Significance
	Female	16.18	1.53		
8	Male	13.23	1.23	1.74	No Significance
	Female	13.26	1.55		
9	Male	13.33	1.36	2.25	0.05
	Female	12.49	1.41		
10	Male	13.83	1.47	2.26	0.05
	Female	13.25	1.81		
11	Male	14.04	1.52	2.16	0.05
	Female	13.46	1.61		
12	Male	13.32	0.93	1.33	No Significance
	Female	13.68	1.32		
13	Male	13.23	0.94	2.41	0.5
	Female	13.28	1.12		
14	Male	13.15	1.11	3.18	0.01
	Female	13.91	1.04		
15	Male	12.76	0.77	0.99	No Significance
	Female	12.96	1.02		
16	Male	13.72	1.22	1.48	No Significance
	Female	14.13	0.83		
17	Male	13.62	1.13	0.57	No Significance
	Female	13.28	1.43		
18	Male	13.44	1.22	0.488	No Significance
	Female	13.54	1.41		
19	Male	12.17	1.62	1.11	No Significance
	Female	12.17	0.98		
20	Male	13.57	1.23	1.46	No Significance
	Female	13.38	1.35		

**Table 4: IV Year Engineering Students**

## RESULTS

From the Table 1, it can be deduced that there does not persist any noteworthy difference between male students and female students for Sustainable Development Goals, the Environmental Planning & Coordination Organization (EPCO), harmful effects of



manufacturing industry, reduction of carbon footprint, renewable resources of energy, solar plant for electricity generation and reduction of electricity bill, vermicomposting, global warming, depletion of ozone layer, deforestation and benefits of planting trees, individual mode of transport, public transport and cycling, increasingly intensive agriculture, importance of water, water harvesting and societal contribution at every of everyone for sustainability.

There persists a significant difference between compared sample students at 0.002 level regarding the general issues of climate change which is in favor of male students, at 0.002 level of significance for conservation of biodiversity in favor of the female students and at 0.5 level of significance for usage of oil, coal and gas to generate electricity which is in favor of female students.

From the **Table 2**, it can be implied that there persists no substantial difference between compared sample students of the selected engineering colleges of Madhya Pradesh for Sustainable Development Goals, conservation of biodiversity, harmful effects of manufacturing industry, reduction of carbon footprint, solar plant for electricity generation and reduction of electricity bill, vermicomposting, global warming, deforestation and benefits of planting trees, individual mode of transport, increasingly intensive agriculture, importance of water and water harvesting.

There persists a considerable difference between compared sample students at 0.001 level regarding awareness related to the general issues of climate change in favor of female engineering students. There is present a significant difference between compared sample students at 0.05 level for the Environmental Planning & Coordination Organization (EPCO) in favor of female students. There persists a noteworthy difference between compared sample students at 0.01 level for renewable resources of energy where the significance is more for female students. Also, there is present noteworthy difference between compared sample students at 0.05 level for usage of oil, coal and gas to generate electricity where it is higher for female students. There persists a noteworthy difference between compared sample students at 0.01 for drought and storms caused due to climate change which is higher for female students. There is a noteworthy difference between compared sample students for depletion of ozone layer at 0.001 level between compared sample students in favor of female students and there is a noteworthy difference between compared sample students at 0.5 level for public transport and cycling which is higher for female students. Finally for the II year students, there is noteworthy difference between compared sample students at 0.05 level for societal contribution at every

of everyone for sustainability which is more for female students.

From the **Table 3**, it is indicated that there persists no noteworthy difference between compared sample students with respect to Sustainable Development Goals, the EPCO, harmful effects of manufacturing industry, renewable resources of energy, cycling and public transport, importance of water, water harvesting and societal contribution at every of everyone for sustainability.

There persists a noteworthy difference between compared sample students at 0.001 level with respect to the general issues of climate change which is higher for female students and at 0.01 level of noteworthy difference between compared sample students for conservation of biodiversity which is higher for female students. Similarly, there persists a noteworthy difference between compared sample students at 0.05 level with respect to reduction of carbon footprint, solar plant for electricity generation and reduction of electricity bill, usage of gas, oil and coal to generate electricity, and with respect to drought and storms which are caused due to climate change and for each of these, it is higher for female students.

From the **Table 4**, for the IV year students of the identified engineering colleges, it is shown that there persists no noteworthy difference between compared sample students with respect to Sustainable Development Goals, the Environmental Planning & Coordination Organization (EPCO), harmful effects of manufacturing industry, renewable resources of energy, solar plant for electricity generation and reduction of electricity bill, global warming, individual mode of transport, public transport and cycling, increasingly intensive agriculture, importance of water, water harvesting and societal contribution at every of everyone for sustainability.

There persists a noteworthy difference between compared sample students at 0.002 level with respect to the general issues of climate change and also for conservation of biodiversity which is higher for female students and at 0.01 level of noteworthy difference between compared sample students for reduction of carbon footprint which is higher for female students. Similarly, there persists a noteworthy difference between compared sample students at 0.05 level with respect to usage of oil, gas and coal to generate electricity, drought and storms caused due to climate change, vermicomposting guidance given by Municipal Corporation of the city and the harmful effects of the depletion of ozone layer and for each of these, it is higher for female students. Finally, there persists a noteworthy difference between compared sample students at 0.01 level with respect to



deforestation and benefits of planting trees which is higher for male students.

## DISCUSSION

The results obtained from the research study depict that the female students of every year of engineering tend to be more aware and conscious about the general issues related to environment. This means that female students are affected more by the social marketing done by not only the government, but other institutions as well.

The study shows that the female students of I, II and III year are aware about the steps necessary to save the biodiversity and are aware about the negative aspects of using gas, oil and coal to generate electricity. This may be because the male students consider these negative aspects as global issues not related to them and which would not affect them in near future, which has been highlighted earlier as well. Female students are more aware about the ozone depletion and the negative effects which it has on human health. Female students are more concerned about the environment protection and consider the conservation of environment their own responsibility rather than that of the government. This shows that the male students tend to throw the ball in government's court for the mitigation of climate change and have a perception that the steps taken by the government would only be necessary to protect the natural resources and the environment. It is also depicted that female students are more aware about the change in seasons and the drought along with the frequency of storms and that climate change is the cause for these natural disasters.

The study shows that the students of IV year of engineering also have the female students ahead with respect to the consciousness and the role of individual in case of conservation of biodiversity, the reduction of carbon footprint, the depletion of ozone layer and that Municipal Corporation gives free guidance for vermicomposting at household level to utilize the kitchen and garden organic waste materials, and that it is the individual responsibility of every person to protect our natural resources. The male students of IV year are more aware about the role of plants and that deforestation is harmful in short and long run to us.

## CONCLUSION AND SUGGESTIONS

The students representing the overall society have shown a positive attitude about social marketing campaigns by the Government of Madhya Pradesh for building a pro-environment behavior amongst them. This means that if the government takes ample amount of steps for raising the level of consciousness amongst the students, it is more likely that the society will

develop a psychology that the individual role is must in mitigating the effects of climate change and that the measures taken today will definitely effect our tomorrow. Also, the researcher's argument that climate change is not a threat of future for some other country in some distant world holds true. But the research also depicts that the overall knowledge and consciousness of the students is low and a lot of scope for improvement is present. Along with this, the female students are more aware and have empathy towards the natural resources, climate change mitigation and the environmental conservation than the male students.

This must be pointed out that the current study is conducted on the citizens of state of Madhya Pradesh, India and the results are predominantly for the stakeholders of the state of Madhya Pradesh, but since the study has been conducted on a large number of respondents and there is a similarity in the policy for climate change mitigation amongst the various states of India, this research, thus, can be useful for the society and the government of other states as well.

The social marketing for the achievement of sustainable development must be increased at every level with a bottom-up approach and the students' eco-clubs at school level, student volunteers, participation in environmental conservation rallies, celebration of World Environment Day, World Water Day, World Wild Life Day, involvement of NGOs and similar programs at micro level needs to be promoted.

## SCOPE OF FURTHER STUDY

There stands a huge scope for further study in the above domain. Even though the researcher has identified a large sample from Madhya Pradesh, this research can be conducted at pan India level to evaluate the status of the social marketing conducted by the Central Government and evaluate the various policies of the Government.

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## Skill Mastery: Triumphant Over Traditional Qualifications in the Contemporary Workforce

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### ABSTRACT

As traditional qualifications no longer hold as much weight today in evolving job market, the emphasis on skill development is rapidly escalating. This shift towards practical skills and real-world experiences from theoretical knowledge is driven by technological progress and business dynamics. This article discusses this rising importance of skills over formal qualifications, the factors fueling this change and the long-term impact on individuals and organizations who embrace this transition. Strategies for developing a skilled workforce, such as online courses, mentorship, on-the-job experience, and continuous learning, are also explored. Ultimately, the article highlights the need to bridge the skill gap and equip the workforce with practical skills to navigate and thrive in the ever-changing modern work environment.

**Keywords:** Skill mastery; traditional qualifications; contemporary workforce; technological advancements; evolving business landscapes

### Introduction

The era of relying solely on educational qualifications to land lucrative jobs and achieve professional success is slowly fading away. As the landscape of the global job market is changing at an unprecedented pace, driven by technological advancements, automation, and the ever-evolving business landscape. Amidst these rapid changes, there is an undeniable shift of focus from paper-based educational qualifications to practical skill sets.

While degrees and certifications still hold value, employers and industries are increasingly recognizing the importance of practical skills and real-world experiences. This article sheds light on the increasing significance of skills and capabilities, the catalysts behind this transformation, and the long-term implications of valuing skills over formal qualifications and how both individuals and organizations can reap the benefits of this paradigm shift.

### Why the Tides are Turning in the Job Market

By 2025, 50% of all employees will need re-skilling as adoption of technology increases (World Economic Forum). This highlights the urgency of adopting a skill-based workforce strategy. Employers have begun to

recognize that resilience, adaptability, and a diverse skill set are indispensable, as these qualities equip professionals to tackle modern industry challenges and technological disruptions.

### The Constraints of Academic Degrees

A recent survey by Ed Surge found that about 75% of hiring managers place greater emphasis on competencies and skills than formal qualifications. The limitations of traditional education often lie in an overemphasis on theoretical knowledge, which doesn't always align with real-world requirements. Acknowledging this discrepancy, employers have started prioritizing tangible skill sets that contribute directly to workplace success.

### Reaping the Rewards of a Skill-Centric Approach

Organizations and individuals alike can benefit significantly from embracing a skill-centric approach:

- Gaining a Competitive Advantage: Companies with skilled employees can outpace competitors by constantly innovating and adapting to emerging industry trends.
- Fostering Inclusivity and Diversity: "Hiring based

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on skills rather than qualifications can break down barriers, thus empowering individuals from diverse backgrounds to thrive in the workplace

- Attraction and Retention of Talent: Emphasizing skill sets allows employers to better identify the talent pool that aligns with their organizational requirements. Moreover, it enables them to retain talent by providing opportunities for continuous learning and skill improvement.
- Adaptability and Resilience: Skilled individuals are more capable of quickly adapting to new challenges, industry trends, and ever-changing work environments. This helps organizations stay agile and proactive in the face of change.
- Driving Innovation: Employees equipped with a broad range of skills can provide fresh perspectives and approaches, catalyzing innovation in the process. The transfer and cross-pollination of skills within an organization can lead to better problem-solving and creative solutions.
- Fostering Entrepreneurship: A skill-centric focus willfully gears individuals towards entrepreneurship. Armed with practical skills, individuals can launch their startups or freelancing careers, showcasing their work independently.
- Promoting Lifelong Learning: A skill-based approach encourages lifelong learning. In an era where technologies and industries evolve rapidly, continual skill development is imperative for personal and professional growth. It fosters an environment of learning, unlearning, and relearning, thereby making one future-ready.
- Bridging the Skills Gap: A skills-centered approach directly addresses the critical issue of the 'skills gap.' By focusing on skills rather than degrees, can better equip the workforce for the demands of the current job market.

### Building a Skill-Based Workforce

Here are some noteworthy examples and methods for honing one's skills:

- Elon Musk, Tesla and SpaceX CEO, is a strong advocate of skills over degrees. He has credited his success to his hunger for continuous learning and ability to challenge traditional educational systems.

- IBM's 'New Collar Jobs' initiative focuses on job candidates with the right skills rather than a traditional academic background, emphasizing the importance of adaptability and technical knowledge.

### Both individuals and organizations can undertake the following steps to develop a skilled workforce:

- a) Online Certifications and Courses: Platforms like Coursera, Udemy, and LinkedIn Learning offer a plethora of opportunities to gain industry-relevant skills.
- b) Networking and Mentorship: Proactively connecting with industry experts and seeking their guidance can lead to substantial professional growth
- c) Apprenticeships and Internships: Hands-on experience in a chosen field allows individuals to refine their skill sets and gain practical insights.
- d) Invest in Training and Development: Corporations should invest markedly in training programs intended to upskill their workforce. Additionally, individuals should proactively partake in these development opportunities. Simultaneously, self-paced online courses, seminars, and workshops are also excellent avenues for skill development that individuals can explore independently.
- e) Emphasize Soft Skills: While hard, technical skills are essential, soft skills - including communication, leadership, critical thinking, emotional intelligence, and more - have become increasingly important in recent times. Organizations should offer soft skills, training, and individuals should recognize the value of these transferrable skills and strive to improve them.
- f) Encourage Skill-Based Assessments: Traditional performance assessments often focus on job performance rather than individual skill sets. Incorporating skill-based assessments can help identify gaps and areas for improvement. For individuals, self-assessment of skills can lead to better understanding of their capabilities and career goals.
- g) Leverage Technological Advancements: A I and digital technology have various applications for skills development. Organizations can leverage e-learning platforms and AI-powered training



programs for personalized, scalable learning experiences. As for individuals, they can turn to technology to access a wide range of courses and resources at their convenience.

- h) **Implement Mentoring and Peer Coaching:** Organizations can establish mentoring programs where seasoned employees guide and train newer ones, thereby facilitating a mutual exchange of skills and knowledge. Individuals can also seek out mentors on their own, learning from experienced professionals in their industry.
- i) **Foster an Environment of Skill Sharing:** Creating and fostering an environment conducive to skill sharing can be a way of developing a skilled workforce. Employees coming together to share knowledge and skills can lead to organic growth in individual and collective competencies

## Expert Opinions and Addressing Counterarguments

Although qualifications still hold value in various sectors, experts acknowledge the increasing importance of skill sets. Johnny C. Taylor Jr., President and CEO of the Society for Human Resource Management, stated that "Degrees matter, but skills matter more. Employers are increasingly looking for a skills match and not so much an educational pedigree." Alvin Toffler argues that, "the illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn." As industries continue to evolve, it's crucial for both individuals and organizations to emphasize skill development and mastery to fuel their success in this dynamic modern workforce. While acknowledging the benefits of formal education, it is crucial to perceive skill mastery as a necessary complement, rather than an outright substitute. Professionals who balance traditional education with a diverse array of skills are often in an advantageous position.

## Conclusion

While educational qualifications are undoubtedly

valuable, the modern job market places increasing importance on a diverse and adaptable skill set. Skills are not bound by time or institutional barriers, and they allow individuals to navigate the dynamic nature of industries effectively. As the world continues to evolve, embracing lifelong learning, acquiring practical experiences, and developing a broad skill set will be the key to personal and professional growth, the importance of skill sets over educational qualifications has never been more apparent. By focusing on skills and investing time and effort in acquiring, refining, and assessing skills can not only pave the way for individual success but also contribute to the growth and overall effectiveness of organizations, alongside educational qualifications, individuals can enhance their employability, remain competitive, and thrive in an ever-changing landscape.

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# Capital Budgeting: Financial Appraisal of Investment Project of GSFC Ltd.

Vimla Virparia\* and Bhagya Kothadiya\*\*

## ABSTRACT

This project focuses on GSFC Ltd, a company in the chemical fertilizer industry in India. The study utilizes various capital budgeting methodologies to evaluate the feasibility of two projects, Project A and Project B. Through a literature review and analysis of secondary data from the company's annual reports, the project assesses the investment decisions of GSFC Ltd. Different capital budgeting techniques, including discounted and non-discounted cash flow methods such as NPV, IRR, DPP, PP, ARR, and the yield-based approach (YBCB), are employed to analyse the projects. The analysis incorporates cash inflows and outflows, changes in working capital, and the comparison of investments and returns over multiple years. The findings suggest that Project A is recommended for acceptance due to its anticipated positive returns, while Project B is deemed unworthy of investment and should be rejected. Both projects, however, generate positive shareholder wealth according to the yield-based technique. In conclusion, the study highlights the importance of capital budgeting in the management of business concerns and recommends accepting Project A while exploring alternative options for Project B.

**Keywords:** Capital Budgeting, Net Present Value, IRR, Discounted Payback Period, Payback Period, Profitability Index, ARR, and the Yield-based approach (YBCB)

## Introduction

Every business entity is required to keep spending money on certain resources or assets that enable it to produce and expand. This expenditure must be made for raw materials, labour, fuel and power, spare parts and supplies, and some necessary maintenance costs. These costs are routine and recurring expenses that enable a business to maintain its current level of output over time.

However, businesses also want to increase their capacity for production or launch new ventures, both of which require them to pay out of the ordinary or irregular costs. These are one-time costs that are incurred when a business recognizes a new opportunity and decides to take advantage of it soon. These expenditures relate to fixed assets like real estate, buildings, machinery, and other items. 'Capital expenditure' is the term used to refer to it.

In this way, spending on fixed assets has cross-temporal implications, which means that while expenses are made now, benefits will be realized later. Because of this, they are treated as decisions as to investments or capital expenditures, and the method of making these decisions is known as "capital budgeting".

The decisions made regarding investments are also referred to as capital budgeting or capital expenditure decisions. Planning for capital expenditures in the purchase of capital assets, such as new buildings, new machinery, or an entire new project, is known as capital budgeting. It speaks of the long-term financing and planning of proposed capital expenditures.

It includes replacing and modernising a process with machinery, introducing a new product, and expanding the company. It covers both the acquisition and application of long-term capital. It includes the creation of Detailed Project Reports (DPR) and profit-indicating cost and revenue statements.

## Need for Capital Budgeting

1. High acquisition costs of fixed assets necessitate capital budgeting.
2. Capital investments involve significant funds and irreversible decisions, making capital budgeting essential.
3. Recovery of funds invested in fixed assets occurs over time, introducing risk and uncertainty, requiring capital budgeting.
4. Capital investment decisions involve assessing unpredictable future events,

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highlighting the need for capital budgeting.

5. Excessive capital investments can increase operating expenses, emphasizing the importance of accurate capital budgeting planning.

## Capital Budgeting Techniques

The capital budgeting appraisal methods, which are methods of evaluating investment proposals, will assist the company in determining the viability of an investment plan based on its relative ability to generate income and rank the proposals in order of desirability. These approaches offer the company a set of standards that it can use to decide whether to accept or reject the investment proposal. Two categories can be used to categorise the methods that are most frequently used to calculate the cost-returns for investment projects.

1. Non-Discounted methods
2. Discounted Cash flow methods

### 1. Non-Discounted methods

These techniques are founded on the idea that an investment project's desirability can be assessed based on its predicted returns and useful life. These techniques rely on the accounting data accessible from the business's books of accounts. These won't consider the idea of the "time value of money," which is important in determining if a project is desirable in terms of present value.

#### Payback period method:

The name of this approach refers to the time period over which the plan will generate enough income to pay back the initial investment. It merely emphasises cash inflows, the economic life of the business, and the investment made in the project without taking time value of money into consideration. This method selects proposals based on the project's potential for financial success. Simple calculations can be used to accept or reject the project, and the results will help identify the risks involved. Since the technique is based on a rule of thumb, it does not take into account the significance of time value of money or the pertinent aspects of profitability.

When cashflow is equal

$$\text{Payback period} = \frac{\text{Cash outlay (investment)}}{\text{Annual cash inflow}}$$

When cashflow is not equal

$$\text{Payback Period} = \text{Years Until Break-Even} + \frac{\text{Unrecovered Amount}}{\text{Cash Flow in Recovery Year}}$$

#### Accounting rate of return method (ARR):

The drawbacks of the payback period method are somewhat mitigated by this method. The rate of return on investment for a certain project is how the rate of return is expressed. It works on the principle that projects will be rejected if their ARR is below a certain rate and will only be given consideration if their ARR is above a minimum rate set by the administrator.

This approach allows for better comparisons because it considers the project's complete economic life. Through the idea of net profit, it also ensures compensation for the project's anticipated profitability. However, this approach also disregards the project's lifespan and the time value of money. Additionally, it goes against the corporation's objective of raising the market value of its stock.

$$\text{ARR} = \frac{\text{Average income}}{\text{Average Investment}}$$

### 2. Discounted Cash flow methods

The time value of money is not taken into account by traditional methods. They weight both the current and projected income flows equally. A rupee earned today is worth more than a rupee earned tomorrow, according to the DCF techniques. These techniques account for both profitability and the time worth of money.

#### Net present value method (NPV)

The time value of money is taken into account by the NPV. The net cash inflows of multiple periods are discounted using a needed rate of return that is predetermined in order to make the cash flows of various years comparable in terms of present values.

It is a present value of future returns discounted at the required rate of return less the present value of the investment's cost, according to Ezra Solomon.

NPV is the difference between a project's initial cost and its present value of cash inflows.

Only one project will be chosen, in accordance with the NPV approach, whose NPV is positive or above zero. If the NPV of a project or project is not zero. The NPV is therefore negative. It needs to be rejected. If there are multiple projects with positive NPVs, the project with the highest NPV is chosen.

The formula for NPV is



NPV= Present value of cash inflows - investment.

$$NPV = \frac{c1}{(1+k)^1} + \frac{c2}{(1+k)^2} + \frac{c3}{(1+k)^3} + \frac{cn}{(1+k)^n}$$

Co- investment

C1, C2, C3... Cn= cash inflows in different years.

K= Cost of the Capital (or) Discounting rate

n = Years.

### Internal Rate of Return Method (IRR)

The discount rate that balances the present value of cash inflows and outflows from an investment is known as the IRR for an investment proposal. IRR is another name for cutoff or handling rate. Usually, it is the capital cost of the business.

"The internal rate is the interest rate that equals the present value of the expected future receipts to the cost of the investment outlay," claim Weston and Brigham.

The IRR is a trial-and-error procedure rather than a predetermined rate. It indicates that in order to compute the present value of cash inflows, one must start with a discounting rate. If the obtained present value exceeds the project's initial cost, a higher rate must be tried. Similar circumstances apply if the present value of expected cash inflows is less than the current value of cash flow. Lower rate must be accepted. It is repeated until the net present value reaches zero. This method is known as the internal rate of return method since the discount rate is determined internally.

$$IRR = L + \frac{P1 - Q}{P1 - P2} \times D$$

L- Lower discount rate

P1 - Present value of cash inflows at lower rate.

P2 - Present value of cash inflows at higher rate.

Q- Actual investment

D- Difference in Discount rates.

### Profitability Index Method (PI)

This method is often referred to as the benefit-cost ratio. This method was developed by a modest modification of the NPV approach. While NPV is an absolute metric, the profitability index (PI), which divides the present value of cash inflows by the present value of cash outflows, is a relative measure in the

case of NPV.

It is accepted if the PI is greater than one (>1); else, it is rejected. The investment proposal with the highest PI will be chosen if there are multiple investment proposals with multiple PIs. This strategy outperforms the NPV method because it is more practical for projects with a range of cash outlays.

The formula for PI is

$$\text{Probability Index} = \frac{\text{Present value of future cash inflow}}{\text{Investment}}$$

### Discounted Payback Period (DPP)

Discounted payback period is a financial metric used to measure the time it takes for an investment to generate enough cash flows to recover its initial cost, taking into account the time value of money. It is similar to the regular payback period, but with the added consideration of discounting the cash flows to reflect the cost of capital.

To calculate the discounted payback period, you would first calculate the present value of each cash flow using a discount rate that reflects the cost of capital. Then, you would add up the discounted cash flows until you reach the initial investment amount. The number of years it takes to reach this point is the discounted payback period.

The discounted payback period provides a useful way to evaluate the risk associated with an investment. If the discounted payback period is shorter than the project's expected life, the investment may be considered less risky, as the investor will recover their initial investment sooner. Conversely, if the discounted payback period is longer than the project's expected life, the investment may be considered more risky, as the investor may not recover their initial investment before the end of the project's life.

### Discounted Payback Period =

$$\text{Years Until Break-Even} + \frac{\text{Unrecovered Amount}}{\text{Cash Flow in Recovery Year}} \times 12$$

### Yield Based Capital Budgeting (YBCB)

A yield-based capital budgeting methodology is described that, presuming select capital markets and predictable cash flows, gives capital project evaluations consistent with maximising shareholder wealth. The methodology is created by modifying a modified rate of return strategy that was first put forth by Lin and more recently in a different form by Beaves.



As a result, the Lin/Beaves technique is examined and an interpretation is offered for both its investment base and return measure. The adjusted approach, which is based on the Lin/Beaves technique, shares the economic interpretations connected to both the Lin/Beaves method's investment base and return measure. As a result, the modified technique offers a return measure with a clear meaning while also accurately evaluating capital investments.

$$\text{Max}[w0^*] = w0 + \sum_{t=0}^n \frac{Ct}{(1+k)^t}$$

where:

w0 \* is shareholder wealth after initial investment

w0 is shareholder wealth before initial investment

Ct is cash flow resulting from the investment occurring in period t

k is the corporate cost of capital

## Literature Review

**Jitesh Ramani and Dr. Arvind Saxena (2023):** Despite challenges posed by the COVID-19 pandemic, the Indian fertilizer industry has experienced positive growth due to strong rural demand and favorable agricultural conditions. The upcoming Rabi season is expected to be successful, driven by improved liquidity among farmers and government support through increased minimum support prices (MSP).

**Katrin Weiskirchner-Merten (2022):** The study explores how conglomerate-structured companies use director's reports for capital budgeting decisions and compensation. It focuses on finding optimal investment sizes and compensation payments that balance directorial information rents and investment effectiveness.

**Md. Anhar Sharif Mollah, Md. Abdur Rouf, and S.M. Sohel Rana (2021):** This research examines the capital budgeting practices in Bangladeshi listed firms, highlighting the most commonly used techniques such as internal rate of return (IRR), payback time, and net present value (NPV). The weighted average approach is popular for determining the cost of capital.

**Woo-Young Kang (2021):** The article compares the internal capital budgeting process of financial firms to non-financial firms, emphasizing the higher debt levels and sensitivity to risk in financial companies. It discusses the key characteristics that differentiate

their capital budgeting processes.

**Paula de Souza Michelon, Rogério João Lunkes, Antonio Cezar Bornia (2020):** This study proposes a methodology for identifying exploration opportunities in capital budgeting. It emphasizes the use of sophisticated analysis practices and the involvement of professionals experienced in capital systems appraisal.

**Stephen ARO-GORDON, Abdelbaset QUEIRI, Gopalkrishnan CHINNASAM, Muatasim AL-SALMI, Mohammed AL-SAKITI (2020):** The article evaluates capital budgeting techniques (CBTs) in the Sultanate of Oman and highlights the importance of additional research in the Omani context.

**Vikas Shrotriya (2019):** The article discusses the characteristics and challenges of capital budgeting projects, such as the need for long-term profitability, higher risk due to large investments, and the importance of comparing costs and benefits.

**Arwiphawee Srithongrung, Juita-Elena (Wie) Yusuf, Kenneth A. Kriz (2019):** The study focuses on establishing a Capital Improvement Program (CIP) for governments, which involves identifying major capital projects, allocating expenditures, determining financial sources, and assessing impacts on future budgets.

**Abdullah Al-Mutairi, Kamal Naser, and Muna Saeid (2018):** The study focused on capital budgeting practices of Kuwaiti non-financial companies listed on the Kuwait Stock Exchange (KSE). Top management and professionals play a significant role in generating capital budgeting ideas. Net present value (NPV) and profitability indicators are commonly used, and non-financial factors are considered in decision-making.

**Dakito Alemu Kesto and Jaladi Ravi (2017):** The study analyzed capital budgeting practices in financial institutions (FIs) and found that only 42.9% of the surveyed enterprises effectively applied new investment appraisal techniques. Payback period (PBP), NPV, and internal rate of return (IRR) were the most frequently used methods. The study suggests further research on capital budgeting for resource allocation in developing countries.

**Lingesiya Kengatharan (2016):** The research aimed to identify gaps in capital budgeting theory and practice over the past two decades. Recent studies support various capital budgeting approaches, including those incorporating risk and more sophisticated methodologies.

**Yaser A. AlKulaib, Sulaiman A. Al-Jassar, and Khalid M. Al-Saad (2016):** The study evaluated preferred capital budgeting practices in Kuwait and found that NPV was widely used. Factors such as age, education, managerial positions, experience, and firm size significantly influenced the choice of capital budgeting techniques.

**Fadi Alkaraan (2016):** The study revealed that large UK companies commonly used multiple capital budgeting methods, with DCF methods like NPV and IRR being prominent. Risk recognition methods included adjusting payback time, increasing the required rate of return, sensitivity analysis, and probability distributions of cash flows.

**Paula de Souza and Rogério João Lunkes (2015):** The study focused on capital budgeting practices in large Brazilian companies and found that payback period, NPV, and IRR were commonly used. The study did not find a clear cause-and-effect relationship between variables explaining the use of more sophisticated practices.

**Roopali Batra and Satish Verma (2014):** The study examined capital budgeting practices in 77 Indian companies listed on the Bombay Stock Exchange. Discounted cash inflow methods like NPV and IRR were popular, while weighted average cost of capital was favored. However, there was a gap in the adoption of specialized methods.

**Imegi, John C., and Nwokoye, Gladys A. (2015):** The article analyzed the effectiveness of capital budgeting techniques in evaluating project profitability. NPV and IRR were found suitable for projects with complex cash flows, while payback period was more suitable for simple cash flows and short-term investments. Non-financial factors were also highlighted.

**Tomasz Wnuk-Pel (2014):** The study surveyed 100 Polish businesses and found that NPV, sensitivity analysis, scenario analysis, and formalization of investment evaluation were commonly used. Factors such as budget size, foreign ownership, and company size influenced the choice of capital budgeting methods.

**J.H. Hall and T. Mutshutshu (2013):** The study examined capital budgeting techniques used by South African state-owned companies in major infrastructure projects. The results showed that state-owned companies use various techniques, with limited use of discounted cash flow. The Capital Asset Pricing Model (CAPM) was the most popular method for determining the cost of equity, and sensitivity analysis was preferred for project risk assessment.

**Tomasz Wnuk-Pel (2013):** The research focused on investment objectives of Polish non-manufacturing companies. The study found that the key aims of investment were to increase company potential, improve customer service quality, extend product range, reduce costs, modernize company potential, and improve product quality. The use of Net Present Value (NPV) and Internal Rate of Return (IRR) had significantly increased compared to a previous study.

**Tomonari Shinoda (2010):** The study analyzed capital budgeting practices in Japanese businesses. The findings indicated that Japanese companies combine the payback period approach with the net present value method for decision-making. Various tools are used during the capital budgeting process, aligning with both business and academic viewpoints.

**Carlos Correia (2010):** The study compared capital budgeting practices in the UK, Australia, and South Africa. It found an increased use of NPV and IRR methods over time. In the UK, the use of NPV grew from 32% to 99% between 1975 and 2003. Sensitivity analysis was commonly used in risk assessment.

**Satish Verma, Sanjeev Gupta, and Roopali Batra (2009):** The study aimed to understand capital budgeting practices in India and the incorporation of risk in investment plans. A primary survey of manufacturing enterprises revealed a preference for both discounted and non-discounted capital budgeting strategies. Various techniques, including NPV, IRR, DCF, sensitivity analysis, payback period, and ARR, were used to assess risk.

**Richard M. Burns and Joe Walker (2009):** The authors reviewed capital budgeting literature from 1984 to 2008 and found that the selection stage of capital budgeting received the most attention. Many areas of the capital budgeting process remained unexplored, providing opportunities for further research.

**Moonseo Park, Yongsik Chu, Hyun-Soo Lee, and Wooyoung Kim (2009):** The article provided an overview of evaluation methods used in construction projects, including cost-benefit analysis, life cycle assessment, risk assessment, and value engineering. The strengths and weaknesses of each method were discussed, allowing readers to make informed decisions based on their specific project requirements.

**Farah M. Leon, Mansor Isa, and George W. Kester (2008):** The study surveyed directors of companies listed on the Jakarta Stock Exchange regarding their capital budgeting practices. Cash inflow methods were commonly used for assessing capital investments, and





sensitivity analysis was the most frequently used risk assessment technique. The main objectives were growth in cash flows, long-term earnings, and share price.

**E Gilbert (2005):** The study analyzed capital investment choices made by South African manufacturing companies. Managers used a multi-stage filtering process based on strategic goals rather than comparing expected values of investment opportunities. Discounted cash flow evaluation tools were subsequently used to confirm expected financial performance.

**Mj du Toit & A Pienaar (2005):** The study focused on capital investment decisions of companies listed on the JSE Securities Exchange SA. Internal Rate of Return (IRR) and Net Present Value (NPV) were commonly used methods. The size of the periodic capital budget influenced the choice of methods.

**J H Hall (2000):** The study found that design description and cash inflow estimation were the most important stages in capital budgeting for South African companies. Return on Investment (ROI) and Internal Rate of Return (IRR) were preferred methods to assess project feasibility.

**David A. Volkman (1997):** The article proposed a new capital budgeting method called Yield-Based Capital Budgeting (YBCB). The method addressed limitations of traditional approaches like NPV and IRR by calculating the yield of an investment project and comparing it to a standard investment.

**Vijay M. Jog and Ashwani K. Srivastava (1995):** The study examined the capital budgeting process and estimated the cost of capital based on a survey of Canadian companies. The findings showed that discounted cash flow approaches were commonly used. Subjectivity and judgment played a significant role in input evaluation, and subjective management estimations were as common as quantitative techniques for cash flow predictions. The cost of equity was primarily determined subjectively.

## Research Methodology

### Problem Statement

Various large-scale organisation introduced various projects and they all do a huge investment in such project hence some time it is required to evaluate such projects so to check the worthiness of the project this study has been conducted. To evaluate such project the study has been required to study.

## Objective of Study

The primary objective of the project is to evaluate the worthiness of the project.

- To study the project's feasibility from the perspective of finances
- To estimate the assets and tools needed for this new project are worth providing return.
- To assess the company's cash inflows and outflows.
- To analyze the company's investment decisions by using various capital budgeting methods.

## Research Design

The descriptive research design is used to study the Capital Budgeting of GSFC Ltd. as we have collected the data from the annual reports of the company and analyse the same.

## Data Collection

Secondary data has been collected from the annual report of the company of past 5 years.

## Sample Size

The study is been done on a single company that is GSFC Ltd for past 5 years.

## Time Frame

The time frame of 5 year is taken for the analysis. Year which are taken for analysis are the 2018, 2019, 2020, 2021, 2022 and estimated the cashflow and net profit of the year 2023.

## Data Analysis Tool

In this study, we have applied the following techniques to analyse the projects worthiness and determined the acceptance and rejection of the project.

1. Net Present Value (NPV)
2. Internal Rate of Return (IRR)
3. Profitability Index (PI)
4. Discounted Payback Period (DPP)
5. Accounting /Average Rate of Return (ARR)
6. Payback Period (PP)
7. Yield Based Capital Budgeting Techniques (YBCB)



### Limitation of Study

- The following are the limitation of the study
- The study is conducted in short period.
- Certain assumption has been defined in this study for the evaluation that may lead to a negative result.
- The primary obstacle to the use of capital planning is uncertainty and risk.
- Since the company's policies and procedures do not permit the disclosure of all financial information, the task must be done using the

data that can be easily available.

- The analysis is based on a company's past data on performance.
- The study is limited only to one company GSFC Limited.

### Data Analysis

#### Change in Working Capital

The change in working capital is the difference between the working capital of the current year and the previous year.

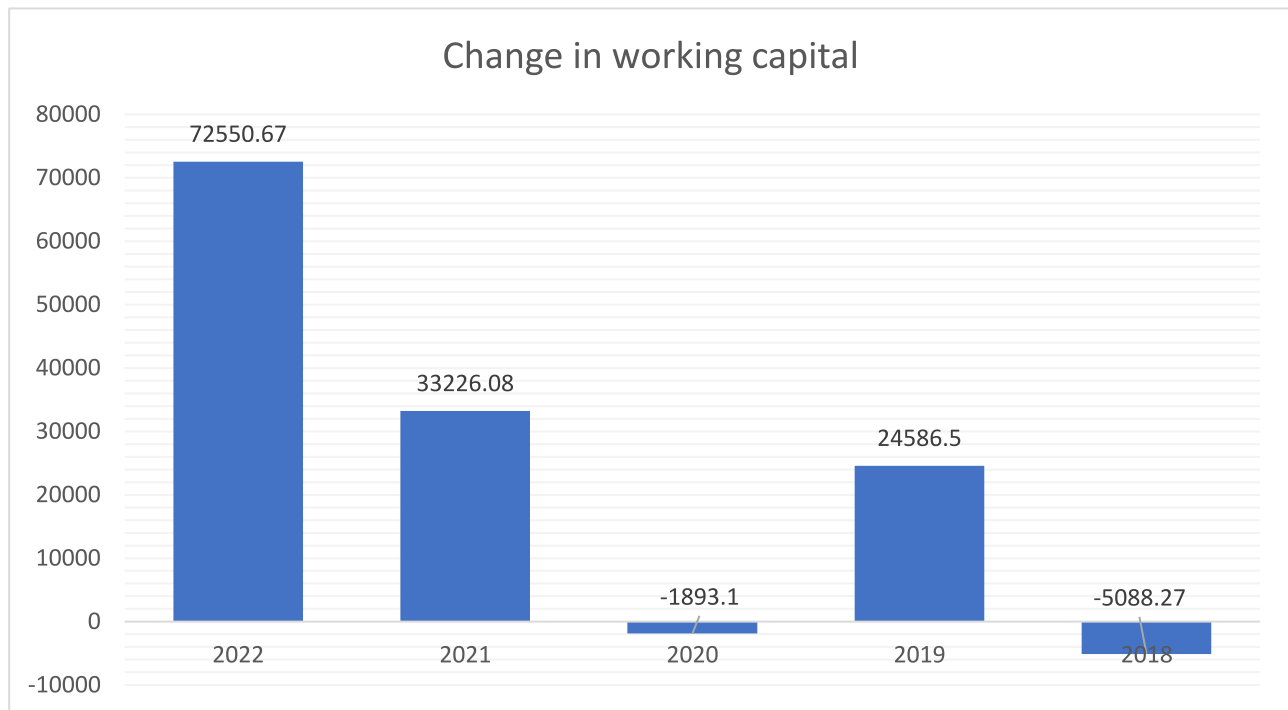
$$\text{Working Capital} = \text{Current Asset} - \text{Current Liabilities}$$

$$\Delta \text{ Change In Working Capital} = \text{Current Year Working Capital} - \text{Previous Year Working Capital}$$

Table 1 Change in Working Capital for five years 2018 to 2022

(₹ in lakhs)

Change in Working Capital						
Particulars	2022	2021	2020	2019	2018	2017
Current assets	447735.31	336132.9	442019.45	455220.99	412066.2	374308.21
Current liabilities	133104.33	94052.59	233165.22	244473.66	225905.37	183059.11
Working Capital	314630.98	242080.31	208854.23	210747.33	186160.83	191249.1
Change in working capital	72550.67	33226.08	-1893.1	24586.5	-5088.27	



Graph 1 Change in Working Capital



### Free Cash Flow

The free cash flow is the cash that a company

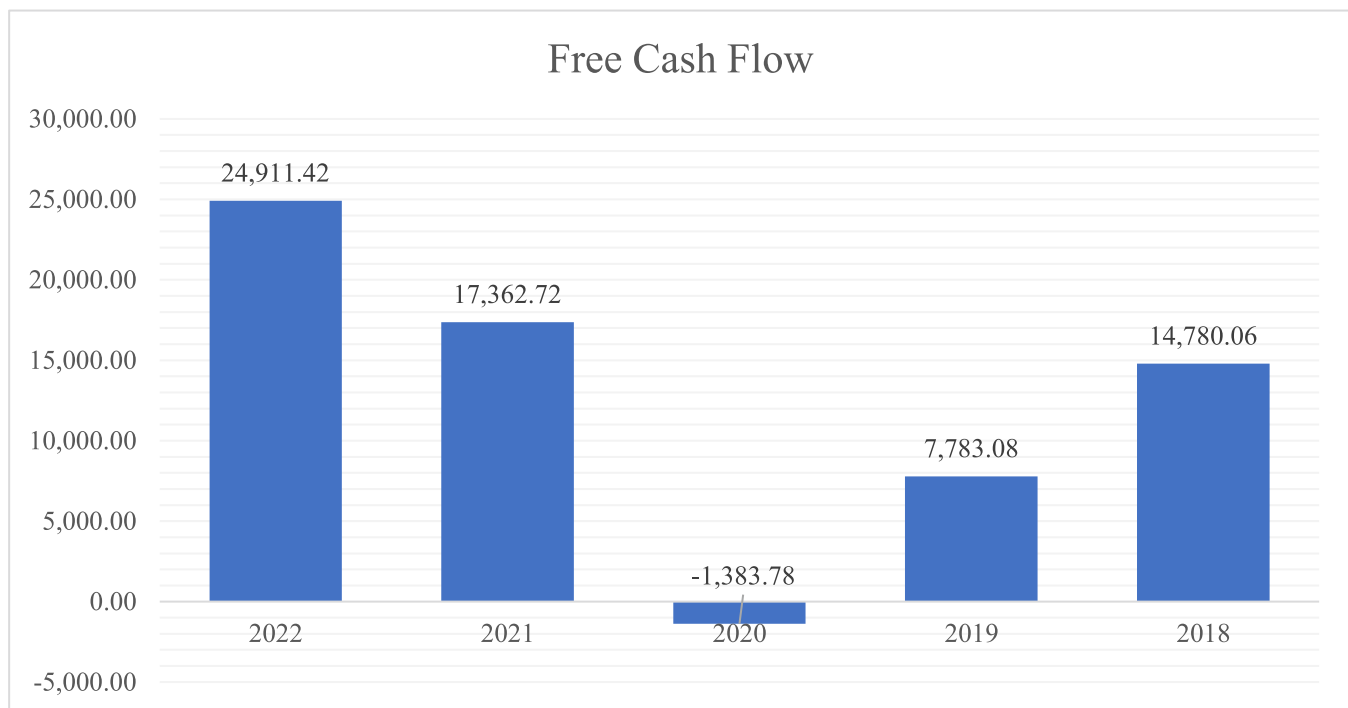
generates after accounting for its capital expenditures and working capital requirements.

$$\text{Free Cash Flow} = \text{Net Profit} + \text{Depreciation/Amortization} - \text{Change in Working Capital} - \text{Capital Expenditure}$$

Table 2 Free Cash Flow for five years 2018 to 2022

(₹ in lakhs)

Free Cash Flow						
Particulars	2022	2021	2020	2019	2018	2017
Net Profit	89,089.93	41,767.05	9,869.64	49,368.45	47,573.35	41,950.24
Depreciation	17,817.54	17,644.74	17,020.92	12,560.56	11,912.09	10,343.12
Change in working capital	72,550.67	33,226.08	-1,893.10	24,586.50	-5,088.27	
Capital Expenditure	9,445.38	8,822.99	30,167.44	29,559.43	49,793.65	24,880.18
Free Cash Flow	24,911.42	17,362.72	-1,383.78	7,783.08	14,780.06	27,413.18



Graph 2 Free Cash Flow

Capital Budgeting Technique

Discounted Technique

Net Present Value

**Project A**  
**Table 3 Net Present Value of Project A**

(₹ in lakhs)

<b>NET PRESENT VALUE</b>				
<b>Year</b>	<b>Cash Flow</b>		<b>PVF at 14%</b>	<b>PV</b>
<b>2017</b>	C0	-24,880.18	1.000	-24880.18
<b>2018</b>	C1	14,780.06	0.877	12962.11
<b>2019</b>	C2	7,783.08	0.769	5985.19
<b>2020</b>	C3	-1,383.78	0.675	-934.05
<b>2021</b>	C4	17,362.72	0.592	10278.73
<b>2022</b>	C5	24,911.42	0.519	12929.03
	<b>NPV</b>	<b>16,357.94</b>		<b>16340.83</b>

**Project B**  
**Table 4 Net Present Value of Project B**

(₹ in lakhs)

<b>NET PRESENT VALUE</b>				
<b>Year</b>	<b>Cash Flow</b>		<b>PVF at 14%</b>	<b>PV</b>
<b>2018</b>	C0	-49,793.65	1.000	-49793.65
<b>2019</b>	C1	7,783.08	0.877	6825.76
<b>2020</b>	C2	-1,383.78	0.769	-1064.13
<b>2021</b>	C3	17,362.72	0.675	11719.84
<b>2022</b>	C4	24,911.42	0.592	14747.56
<b>2023</b>	C5	26,156.99	0.519	<b>13575.48</b>
	<b>NPV</b>	<b>-3,977.14</b>		<b>-3989.14</b>

Note: The cashflow of the year 2023 (C5) is Estimated by taking growth rate 5% of the previous year cashflow.

**Internal Rate of Return**

**Project A**  
**Table 5 Internal Rate Return of Project A**

(₹ in lakhs)

<b>INTERNAL RATE OF RETURN</b>		
<b>Year</b>	<b>Cash Flow</b>	
<b>2017</b>	C0	-24,880.18
<b>2018</b>	C1	14,780.06
<b>2019</b>	C2	7,783.08
<b>2020</b>	C3	-1,383.78
<b>2021</b>	C4	17,362.72
<b>2022</b>	C5	24,911.42
	<b>IRR</b>	<b>36%</b>



## Project B

Table 6 Internal Rate of Return of Project B

(₹ in lakhs)

INTERNAL RATE OF RETURN						
Year	Cash Flow		PVF at 12%	PV	PVF at 3%	PV
2018	C0	-49,793.65	1	-49793.65	1	-49793.7
2019	C1	7,783.08	0.893	6950.29	0.971	7557.371
2020	C2	-1,383.78	0.797	-1102.873	0.943	-1304.9
2021	C3	17,362.72	0.712	12362.26	0.915	15886.89
2022	C4	24,911.42	0.636	15843.66	0.888	22121.34
2023	C5	26,156.99	0.567	14831.01	0.863	22573.48
				<b>48884.35</b>		<b>66834.18</b>
<b>IRR</b>						<b>11.54408</b>

Note: The cashflow of the year 2023 (C5) is Estimated by taking growth rate 5% of the previous year cashflow.

## Profitability Index

### Project A

Table 7 Profitability Index of Project A

(₹ in lakhs)

PROFITABILITY INDEX				
Year	Cash Flow		PVF at 14%	PV
2017	C0	-24,880.18	1.000	-24880.18
2018	C1	14,780.06	0.877	12962.11
2019	C2	7,783.08	0.769	5985.19
2020	C3	-1,383.78	0.675	-934.05
2021	C4	17,362.72	0.592	10278.73
2022	C5	24,911.42	0.519	12929.03
<b>NPV</b>		<b>16,357.94</b>		<b>41221.01</b>
			<b>PI</b>	<b>1.656781</b>



**Project B**  
**Table 8 Profitability Index of Project B**

(₹ in lakhs)

<b>PROFITABILITY INDEX</b>				
<b>Year</b>	<b>Cash Flow</b>		<b>PVF at 14%</b>	<b>PV</b>
<b>2018</b>	C0	-49,793.65	1.000	-49793.65
<b>2019</b>	C1	7,783.08	0.877	6825.76
<b>2020</b>	C2	-1,383.78	0.769	-1064.13
<b>2021</b>	C3	17,362.72	0.675	11719.84
<b>2022</b>	C4	24,911.42	0.592	14747.56
<b>2023</b>	C5	26,156.99	0.519	13575.48
	<b>NPV</b>	<b>-17,562.26</b>		<b>-3989.14</b>
			<b>PI</b>	<b>-0.080113</b>

Note: The cashflow of the year 2023 (C5) is Estimated by taking growth rate 5% of the previous year cashflow.

**Discounted Payback Period**  
**Project A**  
**Table 9 Discounted Pay Back Period of Project A**

(₹ in lakhs)

<b>DISCOUNTED PAY BACK PERIOD</b>					
<b>Year</b>	<b>Cash Inflow</b>		<b>Discount rate 14%</b>	<b>Present Value Cashflow</b>	<b>Cumulative Cashflow</b>
<b>2018</b>	C1	14780.06	0.877	12962.11262	12962.11
<b>2019</b>	C2	7783.08	0.769	5985.18852	18947.30
<b>2020</b>	C3	-1383.78	0.675	-934.0515	18013.25
<b>2021</b>	C4	17362.72	0.592	10278.73024	28291.98
<b>2022</b>	C5	24911.42	0.519	12929.02698	41221.01
<b>DISCOUNTED PAY BACK PERIOD</b>					<b>4.745987663</b>

Discounted Payback Period = Years Until Break-Even +  $\frac{\text{Unrecovered Amount}}{\text{Cash Flow in Recovery Year}} \times 12$

Discounted Payback Period = 3 +  $\frac{((24880.18 - 18013.25))}{17362.7} \times 12$

Payback Period = 3 + 4.745987663

Discounted Payback Period = 3 Years and 5 Months



## Project B

Table 10 Discounted Pay Back Period of Project B

(₹ in lakhs)

DISCOUNTED PAY BACK PERIOD					
Year	Cash Inflow		Discount rate 14%	Present Value Cashflow	Cumulative Cashflow
2019	C1	7,783.08	0.877	6825.76	6825.76
2020	C2	-1,383.78	0.769	-1064.13	5761.63
2021	C3	17,362.72	0.675	11719.84	17481.47
2022	C4	24,911.42	0.592	14747.56	32229.03
2023	C5	26,156.99	0.519	13575.48	45804.51
<b>DISCOUNTED PAY BACK PERIOD</b>					

Note: The cashflow of the year 2023 (C5) is Estimated by taking growth rate 5% of the previous year cashflow.

## Non-Discounted Technique

### Pay Back Period

#### Project A

Table 11 Pay Back Period of Project A

(₹ in lakhs)

PAY BACK PERIOD			
Year	Cash Inflow		Cumulative Cashflow
2018	C1	14780.06	14780.06
2019	C2	7783.08	22563.14
2020	C3	-1383.78	21179.36
2021	C4	17362.72	38542.08
2022	C5	24911.42	63453.5
<b>PAY BACK PERIOD</b>			<b>2.557772697</b>

$$\text{Payback Period} = \text{Years Until Break-Even} + \frac{\text{Unrecovered Amount}}{\text{Cash Flow in Recovery Year}} \times 12$$

$$\text{Payback Period} = 3 + \frac{(24880.18 - 21179.36)}{17362.7} \times 12$$

$$\text{Payback Period} = 3 + 2.557772697$$

Payback Period = 3 Years and 3 Month

Project B  
Table 12 Pay Back Period of Project B

(₹ in lakhs)

<b>PAY BACK PERIOD</b>			
<b>Year</b>	<b>Cash Inflow</b>		<b>Cumulative Cashflow</b>
<b>2019</b>	C1	7,783.08	7,783.08
<b>2020</b>	C2	-1,383.78	6,399.30
<b>2021</b>	C3	17,362.72	23,762.02
<b>2022</b>	C4	24,911.42	48,673.44
<b>2023</b>	C5	26,156.99	74,830.43
<b>PAY BACK PERIOD</b>			<b>0.04</b>

Note: The cashflow of the year 2023 (C5) is Estimated by taking growth rate 5% of the previous year cashflow.

Average Rate of Return  
Project A  
Table 13 Average Rate of Return of Project A

(₹ in lakhs)

<b>AVERAGE RATE OF RETURN</b>				
<b>Year</b>	<b>Net Profit</b>	<b>Investment</b>	<b>Average Net Profit</b>	<b>Average Investment</b>
<b>2018</b>	89,089.93	24,880.18	47,533.68	12440.09
<b>2019</b>	41,767.05			
<b>2020</b>	9,869.64			
<b>2021</b>	49,368.45			
<b>2022</b>	47,573.35			
<b>AVERAGE RATE OF RETURN</b>				<b>3.821008</b>

Project B  
Table 14 Average Rate of Return of Project B

(₹ in lakhs)

<b>AVERAGE RATE OF RETURN</b>				
<b>Year</b>	<b>Net Profit</b>	<b>Investment</b>	<b>Average Net Profit</b>	<b>Average Investment</b>
<b>2019</b>	49,368.45	49,793.65	62,964.19	24896.825
<b>2020</b>	9,869.64			
<b>2021</b>	41,767.05			
<b>2022</b>	89,089.93			
<b>2023</b>	1,24,725.90			
<b>AVERAGE RATE OF RETURN</b>				<b>2.52900498</b>

Note: The Net profit of the year 2023 (C5) is Estimated by taking 40% of the previous year cashflow.



## Yield Based Capital Budgeting Techniques

### Project A

Table 15 Yield Based Capital Budgeting Techniques of Project A

(₹ in lakhs)

<b>YIELD-BASED CAPITAL BUDGETING METHOD</b>				
<b>Year</b>	<b>Cash Flow</b>		<b>PVF at 14%</b>	<b>PV</b>
<b>2017</b>	C0	-24880.18	1	-24880.18
<b>2018</b>	C1	14780.06	0.877	12962.11
<b>2019</b>	C2	7783.08	0.769	5985.19
<b>2020</b>	C3	-1383.78	0.675	-934.05
<b>2021</b>	C4	17362.72	0.592	10278.73
<b>2022</b>	C5	24911.42	0.519	12929.03
<b>Shareholder Wealth (w0)</b>		<b>6,57,515.83</b>	<b>w0*</b>	<b>698736.84</b>
<b>Change in Shareholder Wealth in %</b>				<b>5.90</b>

### Project B

Table 16 Yield Based Capital Budgeting Techniques of Project B

(₹ in lakhs)

<b>YIELD-BASED CAPITAL BUDGETING METHOD</b>				
<b>Year</b>	<b>Cash Flow</b>		<b>PVF at 14%</b>	<b>PV</b>
<b>2018</b>	C0	-49793.65	1	-49793.65
<b>2019</b>	C1	7783.08	0.877	6825.76
<b>2020</b>	C2	-1383.78	0.769	-1064.13
<b>2021</b>	C3	17362.72	0.675	11719.84
<b>2022</b>	C4	24911.42	0.592	14747.56
<b>2023</b>	C5	26156.99	0.519	13575.48
<b>Shareholder Wealth (w0)</b>		<b>7,26,194.77</b>	<b>w0*</b>	<b>771999.28</b>
<b>Change in Shareholder Wealth in %</b>				<b>5.93</b>

Note: The cashflow of the year 2023 (C5) is Estimated by taking growth rate 5% of the previous year cashflow.



## Comparison of Project A and Project B

Table 17 Comparison of Project A and Project B

Particular	Net Present Value (NPA)	Internal Rate of Return (IRR)	Profitability Index (PI)	Discounted Payback Period (DPP)	Accounting /Average Rate of Return (ARR)	Payback Period (PP)	Accepted/ Rejected
Project A	16340.83	36%	1.6567809	3 YEARS 5 MONTH	3.821008047	3 YEARS 3 MONTH	Accepted
Project B	-3989.14	11%	-0.0801135	More than 5 Years	2.52900498	4 Years and 3 Month	Rejected

### Findings

- The net present value (NPV) calculations of two investment projects, A and B, assuming a discount rate of 14%. Project A has a positive NPV of Rs. 16340.83, indicating that it is expected to generate more cash inflows than outflows and should be accepted. On the other hand, project B has a negative NPV of Rs. -3,977.14, indicating that it is not profitable and should not be pursued.
- The internal rate of return (IRR) of project A is 36%, which is higher than the required rate of return, indicating that the project is expected to be profitable and generate a return that exceeds the required rate of return. Hence, the project can be accepted based on the IRR criterion. The IRR of project B is calculated to be 11.54%, which is lower than the required rate of return assumed as 14%, suggesting that the project may not be a worthwhile investment. Therefore, alternative investment options should be explored.
- The profitability index (PI) of Project A is 1.656, which is greater than 1, indicating that the project is expected to be profitable. Therefore, based on the PI analysis, it can be concluded that the project should be accepted. The profitability index (PI) of project B is -0.08, which is less than 1 and negative, indicating that the project is expected to generate negative returns and is not considered acceptable. It is recommended to reject the project.
- Discounted Payback Period of project A is of 3 years and 5 months, which means that it will take approximately that time for the investment to generate enough cash inflows to recover the initial investment. On the other hand, Discounted Payback Period of project B is of more than 5 years, which means that it will take that long to recover the initial investment. The project will not be accepted if the required payback period is less than 5 years. However, since the initial investment is recovered in the year 2023, the project will be considered acceptable according to the discounted payback period rule.
- Payback period of the project A is of 3 years and 3 months, which means it will take that long for the investment to be recouped. Project B has a payback period of 4 years and 3 months, which is longer than the required payback period.
- The average rate of return (ARR) for two different projects, A and B. Project A has an ARR of 3.821%, while Project B has an ARR of 2.52900498% which is lower than the required rate of return. Both projects have a positive ARR, indicating that they are profitable and worth pursuing.
- The yield-based capital budgeting techniques of two potential investment projects, A and B, using a discount rate of 14%. Project A shows a rise of 5.90% in shareholder wealth, and project B shows a rise of 5.93% in shareholder



wealth. This indicates that both projects are acceptable investment opportunities for the company, as they generate positive wealth for shareholders. Therefore, the company should consider investing in these projects to maximize shareholder wealth.

## Conclusion

Capital budgeting is used for long-term investment decision-making to determine whether projects are profitable for the business and will provide the required returns in future years. It is important because capital expenditure requires large sums of money. So, to analyze the project we have used different capital budgeting techniques. The Capital budgeting techniques indicate that Project A is a profitable investment opportunity, while Project B is not. Project A has a positive NPV, high IRR, PI greater than 1, discounted payback period less than 5 years, payback period of 3 years and 3 months, ARR greater than the required rate of return, and a yield-based capital budgeting technique that generates positive wealth for shareholders. In contrast, Project B has a negative NPV, low IRR, negative PI, discounted payback period greater than 5 years, payback period of 4 years and 3 months, and ARR lower than the required rate of return. Both projects are acceptable based on yield-based capital budgeting techniques. In conclusion, based on the different capital budgeting techniques used, project A is recommended for acceptance, while project B should be rejected or explored for alternative investment options.

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## Nurturing Innovation and Entrepreneurship: An Integrated Framework for Achieving Success

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### ABSTRACT

Innovation and entrepreneurship are pivotal forces in driving economic growth, technological advancements, and societal progress. This conceptual article aims to explore the interrelated nature of innovation and entrepreneurship and provide a comprehensive framework for understanding their dynamics and fostering success in these domains. By examining key theoretical perspectives and empirical evidence, this article presents a roadmap for individuals, organizations, and policymakers to nurture and harness the power of innovation and entrepreneurship in a rapidly changing world.

The article highlights the symbiotic relationship between innovation and entrepreneurship, demonstrating how innovation fuels entrepreneurial opportunities, and entrepreneurship drives the implementation and commercialization of innovative ideas. It emphasizes the importance of understanding the innovation process, which involves idea generation, screening, development, implementation, and commercialization, and the entrepreneurial journey, encompassing opportunity recognition, resource acquisition, business model design, market entry, and scaling.

Enablers and barriers influencing innovation and entrepreneurship are examined, including access to funding, supportive ecosystems, regulatory frameworks, education and skills development, and cultural attitudes towards risk-taking and failure. Strategies for fostering innovation and entrepreneurship are presented, encompassing fostering a culture of experimentation, cross-disciplinary collaboration, diversity and inclusivity, access to resources and mentorship, and supportive policies and regulations.

In conclusion, embracing innovation and entrepreneurship is crucial for unlocking opportunities, driving economic growth, and addressing societal challenges. This conceptual article provides a framework for comprehending their interconnected nature and outlines strategies to foster success in these domains, offering guidance for individuals, organizations, and policymakers to navigate the rapidly changing landscape and harness the potential of innovation and entrepreneurship.

**Key words :** Innovation and entrepreneurship, symbiotic relationship, Enablers and barriers

### Introduction

Innovation and entrepreneurship are indispensable drivers of economic growth, technological advancements, and societal transformation. They shape the way industries operate, fuel job creation, and enable individuals and organizations to thrive in an increasingly competitive landscape. This conceptual article aims to delve into the interconnected nature of innovation and entrepreneurship and provide a comprehensive framework for understanding their dynamics and fostering success in these domains. By exploring key theoretical perspectives and empirical evidence, this article seeks to guide individuals, organizations, and policymakers in nurturing and harnessing the power of innovation and

entrepreneurship. In a world characterized by rapid change and disruption, embracing innovation and entrepreneurship is crucial for unlocking new opportunities and driving sustainable growth.

### Defining Innovation and Entrepreneurship:

Innovation and entrepreneurship are two distinct yet interrelated concepts that are fundamental to driving progress and success in today's rapidly changing world. Understanding their definitions and the nuances of their relationship is essential for developing an integrated framework to foster innovation and entrepreneurship effectively.

Innovation can be defined as the process of creating and implementing new or improved ideas, products,

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services, technologies, or business models that bring about positive change. It involves the generation and application of novel solutions to meet emerging needs, address challenges, or capitalize on opportunities. Innovation encompasses a broad spectrum, ranging from incremental improvements to disruptive breakthroughs across various domains, including technology, social initiatives, and organizational practices.

Entrepreneurship, on the other hand, is the mindset, skill set, and process of identifying and exploiting opportunities through the creation of new ventures or the transformation of existing ones. It involves assuming calculated risks, marshalling resources, and taking proactive actions to capitalize on market gaps or unmet needs. Entrepreneurship encompasses activities such as opportunity recognition, business model design, resource acquisition, market entry, and value creation through the pursuit of innovative ideas and approaches.

While innovation and entrepreneurship are distinct, they are intrinsically linked. Innovation fuels entrepreneurial opportunities by providing the catalyst for identifying and capitalizing on novel ideas or technologies. Conversely, entrepreneurship drives the realization of innovation by leveraging innovative concepts to create value, establish ventures, and drive market success.

Innovation and entrepreneurship operate in a symbiotic relationship, with each concept relying on the other for meaningful impact. Successful entrepreneurship often hinges on the ability to identify and leverage innovative ideas, technologies, or business models to gain a competitive advantage. Simultaneously, innovation thrives when entrepreneurial individuals or organizations recognize opportunities and take bold, proactive actions to transform ideas into tangible outcomes.

By recognizing the complementary nature of innovation and entrepreneurship, individuals, organizations, and policymakers can foster an environment conducive to their growth and success. Embracing innovation as a driving force and cultivating an entrepreneurial mindset within individuals and organizations can lead to a virtuous cycle of continuous improvement, disruptive breakthroughs, and sustained economic and societal advancements.

In the subsequent sections, this article will delve further into the interplay between innovation and

entrepreneurship, exploring the innovation process, the entrepreneurial journey, enablers and barriers, and strategies for nurturing innovation and entrepreneurship. Through a comprehensive framework, individuals, organizations, and policymakers can unlock the full potential of innovation and entrepreneurship and drive sustainable growth and impact in a rapidly evolving world.

### **The Innovation-Entrepreneurship Nexus:**

The dynamic relationship between innovation and entrepreneurship forms a crucial nexus that drives economic growth and societal progress. This section delves into the intertwined nature of these concepts, showcasing how entrepreneurial individuals and organizations leverage innovation to create new ventures, while innovation itself is often fuelled by entrepreneurial mindsets and actions.

Entrepreneurial individuals possess a unique ability to identify market gaps, unmet needs, or emerging opportunities. By leveraging innovative ideas, technologies, or business models, they create new ventures or transform existing ones to address these gaps and capitalize on the opportunities. Innovation serves as a critical enabler for entrepreneurship, providing the foundation for entrepreneurial ventures to differentiate themselves, disrupt markets, and gain a competitive advantage. For example, companies like Uber and Airbnb have revolutionized their respective industries by leveraging innovative platforms and business models.

Conversely, innovation is often driven by entrepreneurial actions and mindsets. Entrepreneurs are known for their risk-taking propensity, adaptability, and willingness to challenge the status quo. These traits fuel the pursuit of innovation, as entrepreneurs actively seek out new ways to solve problems, improve processes, or create value. They act as change agents, driving innovation within their organizations or industries. For instance, Elon Musk's entrepreneurial ventures, such as Tesla and SpaceX, have pushed the boundaries of innovation in electric vehicles and space exploration.

Real-world examples and research findings further emphasize the interconnectedness of innovation and entrepreneurship. Successful entrepreneurs frequently rely on innovative ideas or technologies as the basis for their ventures. By recognizing emerging trends or disruptive technologies, they harness innovation to gain a competitive edge and create



value. In turn, innovation-driven entrepreneurship generates significant economic and societal impact, as it leads to job creation, industry transformation, and technological advancements.

Likewise, successful innovations often emerge from the entrepreneurial spirit and actions. Entrepreneurs with a keen understanding of market needs and a willingness to take risks drive the development and commercialization of innovative ideas. They possess the vision and drive to bring innovations to market, making a tangible impact on industries and society as a whole. Innovation-driven entrepreneurship becomes a catalyst for economic growth and prosperity.

Understanding and harnessing the dynamic relationship between innovation and entrepreneurship are crucial for fostering a thriving ecosystem of innovation-driven ventures. By encouraging and supporting both innovative thinking and entrepreneurial mindsets, individuals and organizations can unlock new opportunities, drive industry advancements, and create sustainable competitive advantage. Policymakers play a critical role in creating an enabling environment by implementing policies that encourage and facilitate innovation-driven entrepreneurship.

**The Innovation Process:** Comprehending the innovation process is vital for individuals and organizations seeking to foster and manage innovation effectively. This section outlines the various stages of the innovation process and highlights the significance of creativity, risk-taking, and collaboration in fostering successful innovation.

The innovation process can be broadly divided into several stages, each playing a crucial role in transforming ideas into tangible outcomes. These stages include:

**Idea Generation:** This stage involves the creation and identification of new ideas or opportunities. It encompasses activities such as brainstorming, research, market analysis, and customer insights. Idea generation serves as the starting point for the innovation journey, where diverse perspectives and creativity come into play.

**Idea Screening:** Once ideas are generated, it becomes essential to evaluate and screen them to determine their viability and alignment with strategic

objectives. This stage involves assessing the feasibility, market potential, and resource requirements of each idea. Idea screening helps focus resources on the most promising concepts while eliminating those with limited potential.

**Development:** In the development stage, selected ideas are refined and transformed into prototypes, designs, or minimum viable products (MVPs). This stage involves iterative experimentation, testing, and refining to ensure that the idea is technically feasible, practical, and aligned with user needs. Collaboration and cross-functional teamwork play a crucial role in developing and refining ideas.

**Implementation:** The implementation stage involves bringing the developed concept into practical use. It requires translating the refined idea into action through strategic planning, resource allocation, and execution. This stage involves coordinating activities, managing timelines, and ensuring effective communication to drive the implementation process.

**Commercialization:** The final stage of the innovation process is commercialization, where the innovation is introduced into the market or implemented within the organization. This stage involves activities such as marketing, distribution, scaling, and capturing value from the innovation. Successful commercialization requires effective market positioning, customer adoption, and ongoing monitoring and adaptation.

Creativity, risk-taking, and collaboration are essential elements throughout the innovation process. Creativity fuels idea generation and problem-solving, enabling individuals and teams to think outside the box and generate novel solutions. Risk-taking is inherent in innovation, as it involves venturing into the unknown and embracing uncertainty. Entrepreneurs and innovative organizations understand the need to take calculated risks and learn from failures to drive breakthrough innovations. Collaboration, both internally and externally, fosters diverse perspectives, knowledge sharing, and collective intelligence, enhancing the quality of ideas and facilitating effective execution.

By understanding and actively managing the innovation process, individuals and organizations can navigate the challenges and complexities associated with innovation. Effective management of each stage,

coupled with a supportive culture that encourages creativity, risk-taking, and collaboration, enhances the likelihood of successful innovation outcomes. Embracing innovation as a continuous and iterative process allows for adaptability, learning, and the potential for transformative breakthroughs.

### **The Entrepreneurial Journey**

Building upon the innovation process, this section explores the entrepreneurial journey, shedding light on the key stages and challenges faced by entrepreneurs. It delves into topics such as recognizing opportunities, acquiring resources, designing business models, entering markets, and scaling ventures. The section underscores the importance of an entrepreneurial mindset, resilience, and adaptability in navigating the complexities of entrepreneurship.

**Opportunity Recognition:** The entrepreneurial journey begins with identifying and recognizing opportunities in the market or industry. Entrepreneurs keenly observe market trends, customer needs, and emerging gaps to identify potential areas for innovation and value creation. This stage requires a combination of market insight, creativity, and a deep understanding of customer pain points.

**Resource Acquisition:** Once an opportunity is identified, entrepreneurs face the challenge of acquiring the necessary resources to bring their venture to life. This includes securing financial capital, human resources, intellectual property, technology, and strategic partnerships. Resource acquisition may involve pitching to investors, building networks, negotiating deals, and leveraging personal and professional connections.

**Business Model Design:** Entrepreneurs need to design a viable and scalable business model that outlines how their venture will create and capture value. This involves defining the target market, value proposition, revenue streams, cost structure, and key partnerships. Business model design requires a deep understanding of customer needs, competitive landscape analysis, and continuous iteration and adaptation.

**Market Entry:** Entering the market is a critical milestone for entrepreneurs. This stage involves positioning the product or service, launching marketing campaigns, and building customer awareness and adoption. Entrepreneurs must navigate market dynamics, competition, and regulatory environments

to successfully penetrate the market and gain a foothold.

**Scaling Ventures:** Scaling is the stage where entrepreneurs aim to grow their venture rapidly and capture a significant market share. This involves expanding operations, increasing production capacity, entering new markets, and scaling the customer base. Scaling requires effective management of resources, building efficient processes, and strategic decision-making to sustain growth while maintaining quality and customer satisfaction.

Throughout the entrepreneurial journey, certain challenges arise that entrepreneurs must overcome. These challenges include securing funding, managing cash flow, attracting and retaining talent, adapting to market changes, and overcoming setbacks and failures. Entrepreneurship demands resilience, perseverance, and an ability to learn from failures and adapt strategies accordingly.

An entrepreneurial mindset is essential for navigating the complexities of entrepreneurship. This mindset encompasses traits such as being proactive, innovative, risk-taking, and opportunity-driven. Entrepreneurs need to embrace uncertainty, think creatively, and seize opportunities as they arise. They must be comfortable with ambiguity and possess a growth-oriented mindset that values continuous learning and improvement.

### **Enablers and Barriers:**

Innovation and entrepreneurship are influenced by various factors, both internal and external, that can either enable or hinder their progress. This section examines critical elements that facilitate or pose barriers to innovation and entrepreneurship, shedding light on their significance in fostering a conducive environment for these domains.

**Access to Funding:** Adequate access to financial resources is crucial for supporting innovation and entrepreneurship. Availability of funding options such as venture capital, angel investors, grants, and loans can provide the necessary capital for startups and innovative projects to grow and thrive. Lack of funding or limited access to capital can hinder the development and scaling of innovative ideas and ventures.

**Supportive Ecosystems:** A robust ecosystem that fosters innovation and entrepreneurship can significantly enhance their success. Supportive





ecosystems consist of networks, incubators, accelerators, research institutions, and industry collaborations that provide mentorship, guidance, infrastructure, and access to resources. Such ecosystems create an environment that encourages knowledge sharing, collaboration, and serendipitous encounters, fostering innovation and entrepreneurial activities.

**Regulatory Frameworks:** Favourable regulatory environments can either enable or hinder innovation and entrepreneurship. Regulations that are streamlined, flexible, and conducive to experimentation can foster innovation by reducing barriers to entry, encouraging risk-taking, and protecting intellectual property rights. On the other hand, excessive bureaucracy, complex regulations, and outdated policies can create obstacles that impede the progress of innovative ventures.

**Education and Skills Development:** Education plays a vital role in nurturing innovation and entrepreneurship. Developing a curriculum that promotes critical thinking, problem-solving, creativity, and entrepreneurial skills equips individuals with the necessary tools to navigate the innovation journey. Providing opportunities for lifelong learning, vocational training, and entrepreneurship education can empower individuals to pursue innovative ventures and effectively manage the associated risks and challenges.

**Cultural Attitudes:** Cultural attitudes towards risk-taking, failure, and entrepreneurial endeavours influence the success of innovation and entrepreneurship. Cultures that embrace risk-taking, celebrate failures as learning opportunities, and value entrepreneurship as a viable career path create an environment that encourages individuals to pursue innovative ideas and take entrepreneurial actions. Cultural support for risk-taking and entrepreneurial mindset helps overcome the fear of failure and fosters a positive attitude towards innovation and entrepreneurship.

### **Strategies for Fostering Innovation and Entrepreneurship:**

Drawing insights from the preceding sections, this section presents a set of strategies and best practices to nurture innovation and entrepreneurship effectively. These strategies involve the active involvement of

individuals, organizations, and policymakers in creating environments that support and promote innovation and entrepreneurship.

**Fostering a Culture of Experimentation:** Encouraging experimentation and embracing a growth mindset within organizations cultivates an environment that values innovation and risk-taking. Encouraging employees to explore new ideas, rewarding creativity, and allowing space for calculated failures promote a culture of innovation and entrepreneurship.

**Promoting Cross-disciplinary Collaboration:** Facilitating collaboration among individuals from diverse backgrounds and disciplines can spur innovation by combining different perspectives, knowledge, and expertise. Encouraging cross-disciplinary teams, hosting innovation-focused events, and establishing collaborative spaces create opportunities for serendipitous encounters and idea generation.

**Embracing Diversity and Inclusivity:** Embracing diversity in terms of gender, race, ethnicity, and backgrounds fosters innovation by bringing varied perspectives and experiences to the table. Creating inclusive environments where everyone feels valued and empowered enhances creativity and encourages a broader range of innovative ideas.

**Providing Access to Resources and Mentorship:** Ensuring access to resources such as funding, infrastructure, research facilities, and mentorship programs is crucial for supporting innovation and entrepreneurship. Establishing incubators, accelerators, and startup support programs that provide guidance, mentorship, and access to networks and funding can significantly enhance the success of innovative ventures.

**Establishing Supportive Policies and Regulations:** Policymakers play a vital role in creating an enabling environment for innovation and entrepreneurship. Developing policies and regulations that reduce barriers to entry, protect intellectual property rights, and provide incentives for innovation can encourage the growth of entrepreneurial ventures. Simplifying bureaucratic processes and fostering collaboration between policymakers and entrepreneurs can facilitate responsive policy-making.



By adopting these strategies, individuals, organizations, and policymakers can foster innovation and entrepreneurship, creating an ecosystem that encourages and supports their development. Through a collaborative and holistic approach, the potential for innovation-driven economic growth, technological advancements, and societal progress can be realized.

### Conclusion

Innovation and entrepreneurship are essential drivers of progress and prosperity in today's rapidly evolving world. This conceptual article has provided a framework to understand their interconnected nature and outlined strategies to foster success in these domains. By embracing innovation and entrepreneurship, individuals, organizations, and societies can unlock new opportunities, drive economic growth, and address complex societal challenges.

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## Trends of HR Digitalization Techniques in the Post Covid Era

Dr. Syeda Amtul Mahaboob\*

### ABSTRACT

Although the Digital technology has been adopted long back by firms around the world, the COVID pandemic made them to rely on it completely. In the post COVID era, firms followed the same pattern of digitalization with many people still working from home. Human resource managers completely relied on technology during the pandemic for various HR processes. The trend still continues with many firms adopting advanced HR digitalization tools to stay competitive in the market. These HR digitalization tools became one of the essentials for firms around the world. There is a potential that in future every function performed by an HR can be transformed to a Digital HR. Automation of the HR processes not only saves money but also gives efficiency. The current paper is based on a review and highlights the various trends of HR Digitalization in the Post COVID period. The ideas are presented in the research paper after a thorough review of various secondary sources like websites, journals and reports. The paper endeavors to present the current trends in the market for HR automation and how they could be helpful to the organizations.

**Keywords:** Digital technology, HR functions, HR automation, post pandemic, trends.

### INTRODUCTION

The people who are aware of the practices of Human Resource Management or those who are into the field may also have come across the term 'Digital HR'. The concept of 'Digital HRM' was introduced in the recent years but it gained its momentum during the pandemic. The HR executives were forced to rely completely for providing their services on technology. Even the candidates applying for jobs relied on technology as there was no other way out.

But Digital HR continued its significance even in the post COVID era with many firms relying on it for gaining competitive position in the market. The word 'Digital HR' is comprehensive and refers to all the changes the various HR processes such as recruiting, training, payroll processing, employee grievance handling etc go through using the technology. Tom Penque defined 'Digital HRM' as the number of techniques which can be used to convert the various processes of HR into digital mode and to assist the HR in carrying out their activities digitally. Some of the examples of the 'digital HRM' include the following: recruitment automation, remote interviewing system, online training programs, using mobile apps for job applicants etc. Utilizing the digital services in the HR processes can assist the organization in achieving its strategic mission by saving time and money. The concept in advance

stages involves the use of artificial intelligence, block chain technology and HR analytics (North Eastern University 2020).

A study from Oxford University revealed that seven hundred and twenty occupations might get automated by the year 2035 and the chance of HR jobs to get automated was ninety percent. This shows that there is a high chance of HR jobs to become digital but the position of HR managers, executives and directors would not get substituted with digital machinelike robots. The scenario will be that the digital technologies could ease the HR processes so that the HR executives can concentrate on more important tasks. One example of such automation process is utilizing artificial intelligence like virtual help desk. In the present scenario when employees have any queries, they contact the HR either by email or phone. But a virtual help desk is a facility that uses artificial intelligence and is a chat-bot to answer the simple queries of the workers like number of leaves to be availed, firm's HR policies etc. There is a prediction that artificial intelligence will also be used in hiring and recruitment process of the employees. Although many software are available for such activities the use of AI will make the system more accurate and the goal of diversity in the workforce could be achieved. AI system will be designed to give reply emails to candidates

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stating the reason they were not selected. AI may also be used in the coming days to observe the employee behavior on social media and deciding whether the organization gave promotion to the right candidate. Potential candidates will be selected by using AI for promotion too. Thus, it will help in the employee retention process also. This does not mean that all the HR jobs will get shifted to AI system, but the executives would be able to focus on the strategies of the firm and perform value added functions. Hence a combination structure will be used to perform HRM functions where some functions will be online, some automated and a few requiring humans (HR Magazine 2016).

Deloitte (2020) stated that the firms that had already implemented the technology in HR processes even before the advent of the pandemic dealt well with the business transformation in the pandemic period. The survey of the Deloitte Human Capital Trends (2020) revealed HR digitalization to be one of the key indicators of HR efficiency. The survey report revealed that automation could maximize the impact of HR and improve productivity. The pandemic crisis showed that the firms that already automated the operations are now required to elevate their HR automation capabilities and transform the traditional HR system (Deloitte 2020).

In the present time if the organization wants to sustain in the market, they should acquaint themselves with digitalization. A recent study by Hay recruiters showed that the workers in Malaysia are deeply interested in upgrading themselves with digitalization and learning to adopt the technology. The firm Hay recruitment company conducted a research on employees in China, Malaysia, Hongkong and Japan. The employees were questioned like whether the digital automation affected their jobs and the responsibilities they carry out on their jobs. If yes then to what level of extent it affected them. The results showed that the Malaysia topped the list with most of the employees (sixty one percent) experiencing automation in job duties completely or partially. Forty five percent of the Malaysian employees who participated in the survey agreed that their jobs got affected partially by the automation whereas sixteen percent Malaysian employees agreed to a significant change in duties due to automation. Employees from Singapore were on the second position and their survey results revealed that forty one percent of them got partially affected by the digitalization. Twenty percent of the Singapore employees believed a significant impact of digitalization on their jobs. Forty three percent employees from China and forty nine percent of respondents from Hong-kong revealed

the fact that their jobs are affected by automation only to a certain extent. Only eight percent of respondents from China and thirteen percent of respondents from Hong-kong believed that their jobs got affected due to automation to a great extent. The M.D. of Hays recruiters expressed that firms should not be scared to adopt the digital automation that it may wipe out the jobs. According to him by automation, the jobs requiring middle level skills will get replaced by low skilled workers and high skilled workers (HR Asia 2019). Mruthyanjaya Rao et.al. (2018) in his study showed how digital HRM will improve the effectiveness of the HR processes and the HR policies and strategies can be executed in a proper manner with digital assistance. Ahmed Saleh Ahmed Saif Al-Shameriet.al (2022) presented a paper at International Conference on Industrial Engineering and Operations Management in which they presented the state of digital transformation in Malaysia and the reasons for successful adoption of such transformation. They also presented some of the technologies adopted during COVID19 for HR digitalization.

Gartner (2022), a management consulting firm surveyed five hundred HR Executives in sixty companies to find out the trends for HR in 2022 and their findings revealed Hybrid work as one the key trends for the corporate after COVID19. Ninety five percent of the executives revealed that even after the pandemic some of their employees will work remotely. The transformation to hybrid work was considered the key to drive business change in 2022 by the surveyed HR leaders. They also believed that this transformation requires accountability for adopting innovation in digitalization in the hybrid work model (Gartner 2022).

## OBJECTIVES

- i. To understand how the trend of HR digitalization continued in the post COVID era i.e., year 2022 and will be continued beyond.
- ii. To identify the various techniques adopted for HR digitalization in the year 2022 and will be adopted beyond the year.

## RESEARCH METHODOLOGY

The research is purely conceptual in nature and is based on a review of various secondary sources like websites, articles in journals, conference proceedings and reports.

Dusan Stanar (2021) highlighted workforce analytics to be one of the major trends for HR in 2021 as majority of the employees were working from home. Thus, the





digital tools for analytics were of major importance in 2021. Heartpace (2021) highlighted the importance of digital tools such as workforce analytical tools, collaboration and engagement tools, HR based apps and AI tools in the year 2021. SHRM (2021) also described virtual hiring tools to be of importance for in 2021 and termed it a recruitment trend post pandemic. Moving forward to the year 2022, we will discuss the HR digitalization trends for the year 2022 and beyond. According to People Management Magazine, HR leaders believe that there is an increased concentration on digital transformation of the business. Given below are some of the trends followed in the year 2022 and will be followed beyond the year 2022 for automation of the various HR processes.

- i. **Going Paperless Tools:** With the use of MS Office most of the HR work got paperless but they are still some processes requiring automation like benefit claims forms, application for leave and other miscellaneous items. Thus, the tools that support going paperless will get adopted by many firms (Health Metrics 2021).
- ii. **Artificial Intelligence and Machine Learning:** With reference to a worldwide research conducted by IEEE, the most significant technologies for the year 2022 will be the artificial intelligence, 5G technology and cloud computing. More than twenty one percent of the respondents gave importance to AI, twenty percent to cloud computing and seventeen percent to 5G technology (HR Forecast 2022).
- iii. **Block-Chain:** Block-Chain technology would be integrated into different HR functions in the year 2022 and years beyond. According to Morgan Philips Group, block-chain offers a secure platform over which information can be easily shared between the firms and the employees. The information related to the employees can be on a block chain and can be easily verified by the recruitment companies (HR Forecast 2022).
- iv. **Decentralized HR:** According to a report conducted by HRCI/Mind-Edge in the year 2021, as the employee turnover rate is high, Hybrid work will be continued even in the post COVID period, thus a decentralized system will be developed where HR can contact every employee through the managers (HR Forecast 2022).
- v. **Learning and employee development in the digital mode:** Digital learning became a repetitive HR function in many companies where employees can be motivated to develop themselves after the pandemic. Digital learning will enhance the professional skills of the employees i.e. thus this trend will continue even in the post pandemic world (HR Forecast 2022).
- vi. **Hybrid Working Supporting Technologies:** It has been researched that the firms and people are more ready to accept hybrid work after the pandemic. Therefore, the digital technologies supporting hybrid work will continue in the world after pandemic. These technologies will enable the HR managers to plan the jobs and perform their responsibilities even after the year 2022 (HR Forecast 2022).
- vii. **Diversity, Equality, Inclusion and Belonging:** After the pandemic the diversity, equality, inclusion and belonging are adopted by various firms and the HR technology tools that support the concept should be adopted. Hence the HR technology tools that include diverse workforce, improve employee's belonging to work and promote equality are embraced in the resurgence period after COVID19 (HR Forecast 2022).
- viii. **Technologies that promote Employee Well Being:** Companies in the post pandemic world will focus on the tools that promote employee health and wellbeing. Select Software Review described how HR technology tools will be adopted by firms to look after employee wellbeing. Some of them would be tools supporting employee help programs, tools to plan flexible working hours and rest time, tools offering employee wellness programs etc (HR Forecast 2022).
- viii. **Recruitment through Social-Media:** According to a report by Talent-now, eighty percent of the firms are utilizing social media like LinkedIn and others for the purpose of recruiting the employees that fit their requirements. Talent-now also revealed that this fad will keep on increasing in the future and eighty nine percent of the surveyed firms are planning to perform recruitment by identifying the passive candidates by social media (Health Metrics 2021).
- viii. **People Analytics Leveraging Tools:** Businesses in the year 2022 and years beyond will be looking for tools that will assist in the management of the data. Tools that leverage the HR functions like recruitment, hiring, employee motivation and



retention will be adopted in the post pandemic period (Olive 2022).

- ix. Talent Acquisition Tools: Acquiring talent through digital mode will be a trend in the year 2022 and post 2022. Some of the renowned technologies for talent management include candidate relationship management which allows the HR to maintain a record of passive candidates, employee referral software which allows the employees to refer their acquaintances and application tracking system which will be utilized for applying for jobs by posting resumes, posting current openings and generating interview requests (Olive 2022).
- x. Self Service HR tools: Self-service tools can be of two types: a. Employee Self Service Tools and b. Manager Self Service Tools. Employee Self Service Tools for managing all the queries of the employees. Manager Self Service Tools to reduce the burden of the managers and to make employee services more efficient (Olive 2022).
- xi. HR Management Software: Adopting HR management software became a trend in the post pandemic world and will continue in the future. Some of the trendy software includes Gusto, Moday.com, Quick-books and Pay-cor (Olive 2022).
- xii. Gamification Tools: Applying Game dynamics tools assist the HR in efficient employee engagement. Firms can use game dynamics and reward those employees who showed better engagement and achieved the Key Performance Indicators (KPI) that were targeted (Health Metrics 2021).
- xiii. Virtual Reality for Training the Employees: Simulation models will be used to create a real-life situation to train the employees in a particular area. New employees can also be trained about how to deal with different job situations by creating a real like experience through Virtual Reality software (Health Metrics 2021).
- xiv. Borderless Training: Border less training modules will be used to train the employees in a different country. Such type of training can also be used to train the newly recruited employees in other countries. The system involves the usage of cloud-based training system that provides audio, video and text combined with VR technology (Health Metrics 2021).

HR Tech is a very broad term which includes all the digital technologies that transform the various HR

functions to digital mode. These technologies digitalized some of the following HR functions in the year 2022 and many years to come ahead. i. Performance Management ii. Payroll Management iii. Employee Engagement iv. Expense and Travel Management v. Benefits administration vi. Employee Training and Learning (Olive 2022). It is to be observed that digitization won't replace HR jobs but could create more opportunities. The Cognizant Center for Future of Work and Future Workplace conducted a study on the Future HR roles by involving a brainstorming session of a hundred Chief Human Resource Officers, Chief Learning Officers and Vice President HRs of talent and workforce transformation. Their study resulted in twenty-one new HR Jobs in the post pandemic era. Some of them include Chatbot and Human Facilitator, Work from Home (WFH) facilitator, Director of Well Being, Distraction Prevention Coach, VR Immersion Counselor, Gig Economy Manager, Genetic Diversity Officer, HR Data Detective, Human Network Analyst, HR Data Director, Employee Experience Developer and many more (Harvard Business Review 2020). Thus, the technology has not removed the HR jobs as believed by many earlier. Contrary to the belief it created more opportunities in the digital world.

## CONCLUSION

The research paper highlights the various trends of HR digitalization adopted by topmost Companies in the years following the pandemic. Every company must adopt that trend which suits their requirement and budget constraints. Although these fads are driving HR in the post pandemic era, it is to be noted that the transformation of HR into Digital HR requires more involvement of people. HR Executives and the IT heads should focus on involving every concerned employee in the organization to improve efficient user adoption. Whenever a new innovation has to be adopted by the organization, it requires collaboration of the various departments concerned. The fact that must be accepted is that digitalization is grabbing every sphere and thus Human Resource Management is also one of them. HR Digitalization is here to stay in the post COVID era. The firms must be ready to work together with the tech sellers and find out the best ways in which different HR processes could be digitalized (Olive 2022). The embracement of technology is a very decisive step for any firm and its vital implementation can eliminate errors, repetitive actions and provide space for fulfilling other important functions. Thus, if a firm desire to sustain in the post pandemic era, these trends could be analyzed and embraced to make an entry into the digital world.



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# Digital Marketing - Challenges, Solutions and Problem in Today's Competitive Era

Dr. Shivani Tyagi\* and Dr. Shikha Mittal\*\*

## ABSTRACT

The use of new technologies in businesses has made digital marketing more popular. It has completely changed the old ways of marketing and forced marketers to stay in touch with their purchaser or customers through the internet in order to sell their goods and services. So, when planning the best advertising and setting business goals, marketers must think about and analyse both the pros and cons of digital marketing. Why Digital marketing is used by all businesses because it is efficient and effective, and its popularity is growing faster every day. Businesses will soon find it easier to compete with big businesses on the same platform. So, digital marketing is now a must-have for both small and large businesses in the digital world we live in. This paper is a theoretical framework of evaluating digital marketing challenges & problems & associated solutions as well. For findings of the study, secondary data has been utilised.

**Keywords :** Digital marketing, Competition, Challenges, Problems.

## Introduction

The term "digital marketing" refers to the modern kind of advertising in which sellers and promoters rely on the internet and other digital platforms to reach their intended demographics. Digital marketing, in its broadest sense, is the practise of promoting a product or service via electronic means. It can be used by anyone, anywhere. As a result, modern, digitally-blessed advertising makes it possible to reach any and all target demographics everywhere on the earth. The modern consumer's actions have helped to bridge cultural, linguistic, and geographical divides. That's why everyone, from students to business owners, needs to get up to speed on digital marketing.

## Review Literature

The term "digital selling" refers to the use of digital technologies to facilitate sales processes and better understand buyer preferences (Chaffey, 2013). As a result, there has been a shift in the knowledge and abilities sought by employers (Schlee & Karns, 2017) and a corresponding demand for professionals with digital literacy and analytical prowess (Grewal, Roggeveen, & Shankaranarayanan, 2015). Only 8% of marketers in U.S. and U.K. organisations were found to have basic knowledge of digital marketing in a recent study and evaluation (O'Brien, 2016), but over two thirds said they needed to learn more about digital marketing to keep their jobs. "Some have argued that a university's marketing education should be evaluated

based on its theoretical outcomes (Petkus, 2007) or that a professional training focus should only be taken into account by some schools (Schibrowsky, Peltier, & Boyt, 2002), but the high demand for technically sound knowledge that is applicable to the workplace is forcing universities to re-evaluate their approach to training as an existential matter of relevance".

(Munshi, 2012) conducted research that found that traditional advertising has been overtaken by digital selling. Due to the fact that it is so powerful, it ought to make it easier to do an analysis of the economy and might create amazing prospects for the government to operate more effectively. According to research conducted by Rai (2018), digital selling has grown in importance as a means of increasing sales of goods and services. As a result, marketers employ this new sort of selling approach. The development of digital selling has brought about changes in the way in which companies and organisations promote their products and services by utilising digital technologies and platforms. According to Kucuk & Krishnamurthy As we will see in a moment, the recent growth of social media in recent years demonstrates marketing through digital media. (Alzyoud, 2018), examined at the present time, digital selling comprises an additional comprehensive scope to expand their firms in the foreseeable future. As a direct consequence of this, consumers are much more enthusiastic about shopping online and are coming to the realisation that conducting business via the internet is significantly more secure than traditional

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methods of conducting business. (Lamberton and Stephen, 2016) Social media and digital technology have enabled new means to acquire, inform, sell, learn about, and supply services to clients with a social dimension. This has resulted in a change in the experiences that customers have when using these technologies.

## **Research Methodology: Conceptual and Theoretical Considerations**

This study's overarching goal is to pick one of these three categories. In making our choice, we will take into account how well each candidate fits the criteria of the research. Using a defined phenomenon, Wiedersheim Paul and Eriksson set off on an exploratory study path to better understand it (2006). When important characteristics or the most relevant associations are obscure, this kind of investigation shines. Researchers document their findings and compile data to provide context. The researcher is responsible for keeping records and updating charts with data "(Wiedersheim-Paul & Eriksson, 2006)". In this method, the researcher sees descriptive research as appropriate for a relatively uncomplicated situation in which the problem has been well-structured and where the emphasis has been placed on the interrelationships between the important sources and associations. In this phase, the researcher chooses among many levels, perspectives, requirements, factors, essentials, and, most importantly, records; classifies, organises, and infers from the data collected.

In order to maintain the explanations provided by the intake, the researcher evaluates the appropriate sources and links. Exploratory research approach is structured for intensive focus on the interplay between a few carefully chosen factors and the ensuing phenomena (Wiedersheim-Paul & Eriksson, 2006). Overall this research is based on secondary data content collected through published articles, research papers & digital marketing websites.

### **Objective of the Study**

- To evaluate the problems, challenges & challenges in digital marketing.
- To justify findings of the study.

### **Opportunities of Digital Marketing**

After using different tools and methods, digital marketing can be successful and open doors to new opportunities. These tools help marketers get the most out of digital marketing by letting them do things like:

#### **1. Easy for people to get to**

Digital marketing helps organisations contact many customers at once. Internet marketing is a fast approach to reach clients and prospects around the world. Social Media Marketing has transformed how sales are promoted on Facebook, YouTube, Instagram, LinkedIn, Pinterest, etc.

#### **2. Advertising directly**

Digital marketing promotes a product or brand directly. Businesses can now advertise on digital networks. Online marketers can succeed in a competitive market with a good advertising plan and sales promotion tools.

#### **3. Having ads show up all the time**

Customers can see digital adverts anytime, anywhere. Prospects can view advertising on any website. Long-running adverts encourage clients to contact you and buy your products or services. These advertising should be well-designed for a website. Also see how to install adverts on a website.

#### **4. International Promotions**

One of the best things about online marketing is that it lets businesses advertise all over the world, across borders and to more people.

#### **5. Promotion of Products and Services**

As the internet becomes increasingly used in commercial settings, brands have the potential to significantly increase their consumer base and improve their ability to engage with them.

#### **6. Low-Cost Distribution Method**

Digital Marketing is a form of advertising that uses the internet rather than more traditional methods such as television, radio, print media, and outdoor advertising. The advertising budget for a company engaging in digital marketing can be tailored to the company's specific circumstances. Huge amounts of free traffic are generated for most websites and company profiles (which display advertisements and product information). With all its advantages, social media has been a major factor in boosting digital marketing initiatives. Other major traffic generators are social media marketing channels like "Facebook, Twitter, Google+, LinkedIn, WhatsApp, Blogs, Yelp, Instagram, YouTube.

#### **1. Online shopping's ease for customers**

The rise of digital marketing has made it possible for consumers to shop online throughout the clock (24/7),



regardless of where the goods are actually sold. As a result of digital marketing, businesses now have the option of directing clients to an online storefront.

## 2. Responsibility for Marketing Efforts

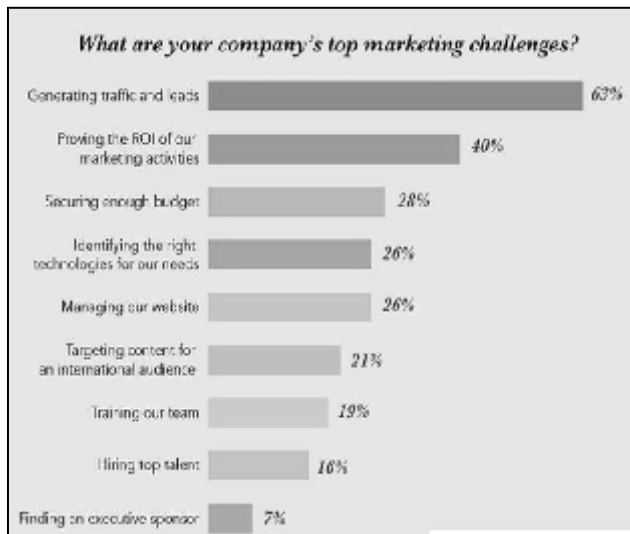
The success of digital marketing, the volume of related activity, and the quality of the dialogue can all be gauged with the help of the analytics provided by digital marketing platforms. Marketers can use the tools available in digital marketing to conduct quality checks on the information posted to their websites.

## 3. Aiding the Profession of Marketing

A growing number of businesses are realising the potential of the internet to reach new customers, and those with experience in digital marketing strategy and implementation are in high demand.

### Current Scenario - Digital Marketing Challenges

Digital marketers are having to change their strategies because of how people are acting. It's getting harder to meet customer expectations and stay ahead of the competition while keeping up with the latest tech.



According to Deloitte, 72% of marketers say that marketing has become more important during the pandemic year (s). Since consumer habits has shifted significantly in the last 18 months, digitalization has become a strong way to reach both new and old customers. People have had to change how they live because of the rules that have been put on them. So, they go shopping and spend their time in different ways.

- **Digital marketing is in a transitional phase right now, which is not a secret. Other problems**

**include:**

Customer expectations are continuously shifting, making it difficult to put them first.

Although marketing success depends on consumer focus-

%	Problems
65%	Respondents stated that what they expect from one industry affects what they expect from others.
52%	Customers want every offer to be tailored to them.
66%	Want companies to know their specific needs and goals.
66%	Say they're usually treated like numbers.
48%	Respondents stated they trust companies most of the time.

### - Making interesting content

In recent years, video and audio have become more popular, which has changed a lot of people's ideas about what makes content interesting. Even though this isn't always a new trend, the need for interesting and engaging content keeps growing. Agencies need to find new and interesting ways to present content and talk to the people they are trying to reach.

### -Keeping up with rules about privacy and data sharing

Only 27% of people understand how corporations utilise their personal information, and 86% want more transparency. Online marketers must deal with changing privacy rules and third-party cookie removal. As a website gets more global users,

### -Approach that works well with mobile devices

People shop and look around on their phones and tablets more than ever. App Annie says that Covid has changed how people use their phones "forever," with people spending 25% more time than ever on their mobile apps.

### -Omnichannel marketing strategies

Salesforce found that the majority of customers (74%) like to use many channels when making a purchase. You need the correct digital marketing team in place to take advantage of new and existing marketing trends to your advantage. A third of marketing leaders told Gartner that communicating their digital marketing goal requires them to create more collaborative relationships across the organisation. The first step for digital marketing leaders in assembling high-performing cross-functional teams is finding and recruiting the most qualified candidates.



**Table : Analysing important Challenging Factors (Created by Author)**

S.No.	Important Challenging Factors	% on the basis of secondary data	Outcome
1.	Budget	47%	Published study outcome that budget is more challenging to manage.
2.	Talent	12%	Studies suggest that these days almost all employees are quite comfortable with digital solutions. Although 12% still people are facing challenges during digitalisation.
3.	Data Management	10%	Studies focused that storing, managing & maintaining data is also a major challenge in digital era.
4.	Adapting to the Technological Shift	8%	Studies observed that very frequent changing in technologies these days. So adaption challenge & problem still facing by many organisations.
5.	Knowledge Upgradation	5%	Research suggested that keep on updating about new changes, impulsively upgradation of knowledge is a major challenge.
6.	Periodic Team Assessment	3%	Studies suggest that to do periodic assessment, itself is a challenge.
7.	Focus on Return on Investment (Roi)	15%	Research outcomes were based on return-on-investment challenge. Because there is always a huge investment in digital marketing. So each organisation majorly focus on ROI, so that growth & productivity can be achieved.

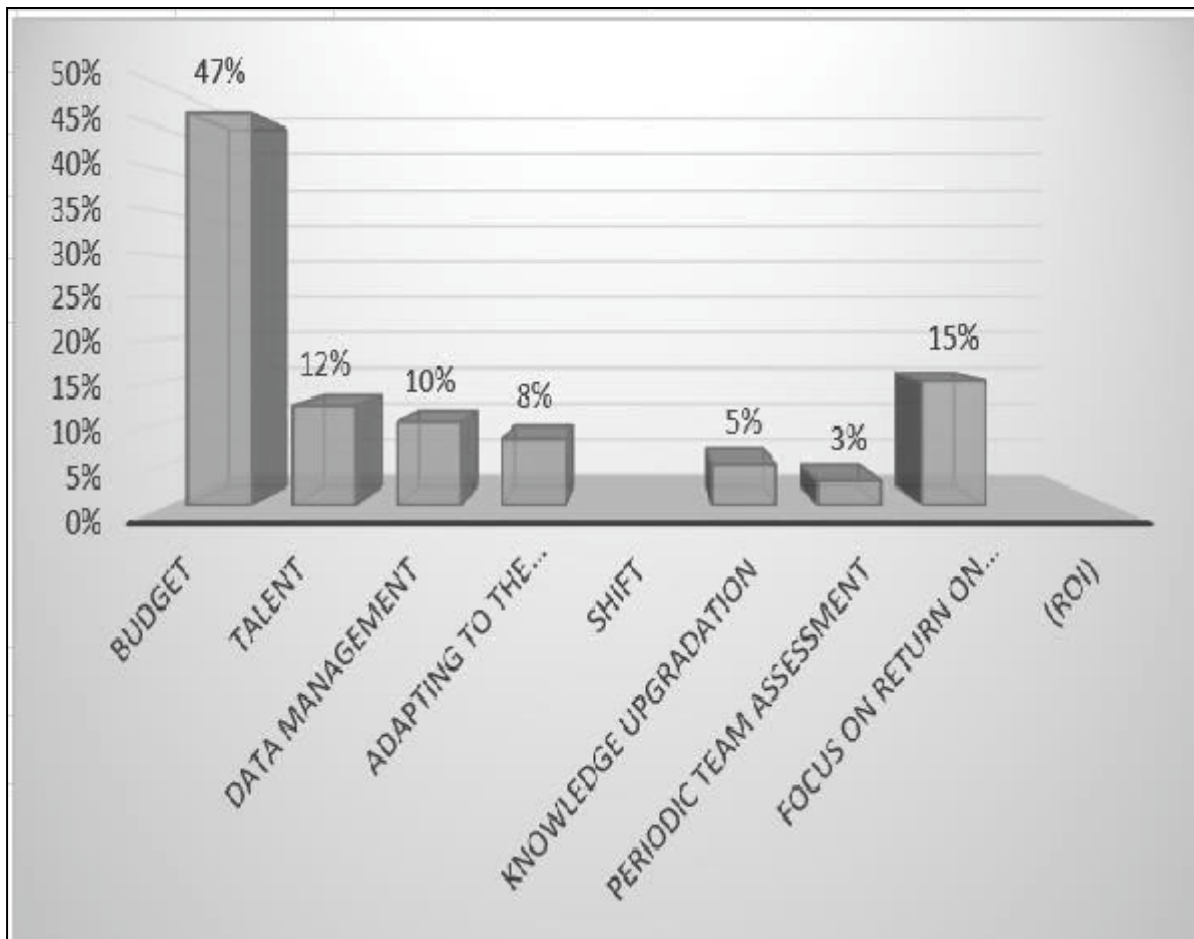


Figure : Graphical Presentation of important Challenging Factors (Created by Author)

#### Findings & Solutions of the Study

- Optimize your site for search engines to get more traffic.
- Promote your website with Pay-Per-Click (PPC) ads to get targeted visitors.
- Launch digital billboard advertising campaigns.
- Plan and manage an effective email campaign by gathering, categorising, and utilising your list of subscribers.
- Campaign Promotion.
- A larger and more invested following can be built by strategically utilising relevant social media platforms.
- Social media campaign metrics and optimization.
- Use mobile marketing's microtargeting benefits to your advantage.

- The total digital marketing activity will be analysed and optimised.
- Construct a comprehensive strategy for corporate digital marketing.

#### Conclusion

Over the past five years, digital marketing has been increasingly popular. With the advent of e-commerce, the value of a company's services has shifted from their physical delivery to its virtual promotion and sales. Marketers and salespeople can no longer afford to ignore digital tactics. The conventional form of doing business has given way to the E-commerce model, which has resulted in a paradigm change. Competition in the industry is heating up as both the number of available items and the number of available markets grow. Most businesses today are either actively planning for or actively implementing some sort of digital transformation strategy. The majority of modern



marketing plans include social media integration because virtually all businesses now have websites. Although social media plays a significant role, a comprehensive strategy to deal with the digital revolution must address many other factors as well. The impact of digital technology is far-reaching, and its effects are not linear. We encourage businesses to consider the implications of technological developments for themselves and their constituents in a world where a smartphone is no longer just a smartphone but a possible revolution. We concur with the viewpoint of top-level management that sees digital more as an opportunity to be exploited than a threat to be prevented. It's crucial to evaluate an organization's competence and willingness to adapt before implementing a digital strategy, as not all digital initiatives will be successful. However, the wider the initiative's scope, the better its odds of success. It is our opinion that the greatest competitive advantage will go to those that think and act strategically as a whole and do so immediately.

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# A Study on Cyber Security and Cyber Crime faced by Childrens

Dr. Manjusha Goel\* and Abhishek Gupta\*\*

## ABSTRACT

In today's society, which is governed by technology and network connections, it is critical to understand what cyber security is and how to use it efficiently. If there is no security to secure it, systems, vital files, data, and other essential virtual items are at danger. Every company, whether it is an IT firm or not, must be safeguarded equally. With the advancement of new technologies in cyber security, attackers do not lag far behind. They are utilizing improved hacking tactics and targeting the weak areas of numerous firms out there. Because military, political, financial, medical, and business organizations acquire, practice, and store vast amounts of data on PCs and other devices, cyber security is critical. A significant portion of such data can be sensitive information, such as financial data, intellectual property, personal information, or other types of data for which unauthorized access or acquaintance could result in severe consequences.

**Key Words:** cyber security, cybercrime, cyber ethics, Cyber Space, Data, Digital, Government.

## INTRODUCTION

Cyber Security is a process that's designed to protect networks and devices from external threats. Businesses typically employ Cyber Security professionals to protect their confidential information, maintain employee productivity, and enhance customer confidence in products and services. The main element of Cyber Security is the use of authentication mechanisms. For example, a user name identifies an account that a user wants to access, while a password is a mechanism that proves the user is who he claims to be.

**People-** Consumers must appreciate and obey with basic information security ethics like selecting strong passwords, actuality wary of accessories in email, and back-up up data. Learn extra around basic cybersecurity values.

**Processes-** Governments must have an outline for how they contract with together attempted and popular cyber attacks. Some well-respected outline can escort you. It clarifies how you can recognize bouts, protect organizations, notice and reply to threats, and improve from successful occurrences.

**Technology-** Technology is vital to giving individuals and organizations the system security tools wanted to protect themselves as of cyber-attacks. Three chief objects essential be threatened: endpoint strategies like PCs, handheld devices, and routers; systems; and the cloud. Shared technology cast-off to defend these objects contain next-generation firewalls, DNS pass through a filter, malware defence, antivirus tools, and

email safety results.

Cyber might be distinct as somewhat connected to the collection of workstations or the network. At the same time, security means the mechanism of protecting anything. Consequently, the terms Cyber and safety took organized define the way of defensive user information on or after the spiteful attacks that might clue to the security break. It is the time that has been cast-off for a period back afterward the internet happening developing like whatever. By asset of Cybersecurity, any society or any user can protected their critical data from hackers. However, it is apprehensive with hacking at around point, it in fact used ethical hacking to contrivance Cybersecurity in any structure.

The word Cyber originally came from Cybernetics derived from the Greek Kubernetes which refers to a Pilot or steersman. It was actually popularized by an American mathematician Norbert Wiener. He wrote a book in the 1940's called Cybernetics. This was his prediction for a future which is dominated by a self-governed PC framework that had its own feedback loop and would continue to grow. It wasn't actually until the 1980's when cyber linked with other words meaning something related to digital. Cyber is "relating to or characteristic of information technology, virtual reality or computers." If we mention that today we live in a Cyber age, it means the age of analysts, virtual reality, or information technology. Just like real universe cyber universe is expanding. In last 60 seconds for instance there will have been thousands and millions of updates on Facebook, twitter and on

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other platforms. We spend our time on checking emails every day. There are estimates that over 70% of those emails are actually spam or hackers or spam in terms of malicious software trying to gain access to your systems and to your personal information.

## OBJECTIVE OF STUDY

- To study the rapid growth of cybercrime against children.
- To Strengthen and protection regarding cybercrime in IT Law, POSCO Act and IPC Emphasized its relevance in each aspect of offences
- To study the role of government for the protection of cyber-crime.

## LITERATURE REVIEW

According to a survey released a year ago by Symantec Corp. (now part of Broadcom), India is the world's second most cyber-attacked country, after only the United States and China. This was widely publicised in the media. Indian legislation, particularly the Indian IT Act 2000, can not entirely protect its citizens from new attack vectors like as phishing, SIM jacking, ransomware, mobile installment fraud, bank fraud, malware assaults, social engineering, and DDoS attacks, which are all becoming increasingly common nowadays. Das (2013) highlights how the Internet's efficacy has been demonstrated in multiple and innumerable ways, which will hopefully be enough to ensure that it does not become a wasteland of illegal activity and an upholder for the malevolent. According to him, the government will play a significant role, but the majority of the prevention will be handled by business companies by developing software that can detect and prevent fraud.

## RESEARCH METHODOLOGY

This research study is based on an analytical analysis of the research that I completed, and the data for this research study comes from secondary information sources. The data for this study comes from a number of sources, including libraries, newspapers, periodicals, journals, and internet sites, some of which are listed in the References section.

## CYBER SECURITY ISSUES IN INDIA

India is home to a population which is rooted in diverse socio-economic backgrounds. As per the living standards of people, a wide range of devices are in use - from high-end secured electronic devices to low-cost mobile phones. This makes it difficult for authorities to

set uniform legal and technical standards for regulating data-protection. Additionally, digital literacy and awareness among the population is also very low.

## 1.Risks of harm and threats for Children in a Digital age

Children and young people, globally, in an increasingly digitally connected world, are among the most active users of Internet and web-based services. It is estimated that 1 in 3 children worldwide use the internet, or, one can say that 1 in 3 internet users is a child under 18 years of age. Children tend to surf the web to access educational information and content for entertainment, to develop their digital skills to acquire new opportunities, or to maintain their online/digital identities and social relationships. However, increased access to information at various web-platforms also lead to increased exposure to materials which are neither age-appropriate nor suitable for children for viewing, and/or risks/threats that children face online. Owing to their young age and evolving development capabilities, children and young people are vulnerable to abuse and exploitation at the hands of cyber-predators and perpetrators.

## 2. Cyber-predators and cyber-bullying

Predators, who exploit vulnerabilities of young children often access social networking websites and spaces for chats and social interactions to exploit children. They often capitalize upon the element of anonymity to befriend children and subject them to high risks to their safety and security such as abuse or violence. Cyber-bullying through social media platforms have also become a prevalent peril. It is thus critical for parents to encourage children to trust them and confide in them about their social interactions online, especially about those that cause distress to them. Children should also be educated to call CHILDLINE 1098 in case they want to report or talk about cyber bullying.

## 3. Online scams

Children are also vulnerable to 'Online Scams' which are often targeted at adults for coaxing money out. Several scams and false schemes such as encouraging claims to lottery winnings, requesting payments to receive awards, gifts and winnings, websites offering products at cheap prices etc. lure children into accessing these schemes. In most cases, children either end up sharing parents' or guardians' financial information or lead to entrapping their families into bigger scams and ponzi schemes. It is important to make children aware of such scams and educate them on the implications that such schemes might have in

future. CHILDLINE 1098 is available 24x7 for children in distress. CHILDLINE provides a listening ear to children who wish to talk about/report cyber-threats and seek guidance to pacify the problem.

### **CYBER CRIME PREVENTION MEASURES FOR CHILDREN**

A child's intelligence is the best resource for assessing the information on the internet. In the vast majority of situations, parents are held legally responsible for the behaviour of their children. In order for children to know how to react when they come across hazardous content, parents should have taught them about abuse, pornographic material, hate literature, excessive force, and other issues that alarm them. A private internet service with family control features ought to exist. Children shouldn't disclose any important information online, including their name, address, phone number, password, school name, and parents' names. Children must never decide to meet someone they met online, and they must never reply to any emails that use foul language or seem ominous, strange, or uncomfortable

### **CASES OF CYBER CRIME**

The latest published report is for the year 2020. As per data published by NCRB, a total of 305 and 1102 cases of cyber-crime against children were registered during the year 2019 and 2020 respectively. During the same period, the cyber-crimes against women have been registered as 8379 and 10405.

More than 400 per cent increase in cyber-crime cases committed against children was reported in 2020 in comparison to 2019, with most of them relating to publishing or transmitting of materials depicting children in sexually explicit act, according to the latest NCRB data.

Top five states reporting cyber-crimes against children are: Uttar Pradesh (170), Karnataka (144), Maharashtra (137), Kerala (107) and Odisha (71), the National Crimes Record Bureau data stated

In 2019, 164 cases of cyber-crimes against children were reported while in 2018, 117 cases of cyber-crimes were committed against children and 79 such cases were registered in 2017.

### **GOVERNMENT ENDEAVOR TO COMBAT CHILD ABUSE IN CYBERSPACE**

- "The Information Technology (IT) Act" of 2000 includes provisions for dealing with cybercrime against children. Sec 67-B28 of the Act imposes severe penalties for publishing, browsing, or transmitting in electronic form material depicting children in sexually explicit acts, among other

things. "Sec 354-A and 354-D also provide for penalties for cyber-bullying and cyber stalking."<sup>29</sup>

- A rule published under the IT Act mandates that intermediaries notify users of computer resources that they must refrain from uploading or displaying anything that is obscene, pornographic, paedophilic, or harms minors in any way. They must also refrain from disclosing any information that is currently illegal, or that they will be subject to disciplinary action under the Information Technology (Intermediary Guidelines and Digital Media Ethics Code).
- It's important to note that the Central Bureau of Investigation (CBI) and national Interpol nodal agency periodically block websites that contain extreme child sexual abuse material (CSAM) for a variety of reasons.
- The government has issued a directive to concerned Internet Service Providers (ISPs) to establish a suitable framework for receiving the Internet Watch Foundation's (IWF) UK list of CSAM websites and webpages on a dynamic basis and banning access to child pornography websites and webpages.
- Internet service providers (ISPs) are recommended to take appropriate measures to enhance awareness among their customers about the use of parental control filters on end-user devices via email, invoicing, SMS, websites, and other means.

### **How does Cyber Security make working so easy?**

No hesitation that the tool of Cyber security makes our work very easy by ensuring the obtainability of the capitals limited in any network. A commercial or society could look a huge damage if they are not honest about the safety of their online occurrence. In today's linked world, everyone aids from progressive cyber defence agendas. At a separate level, a cyber security outbreak can result in entirety from individuality theft, to blackmail attempts, to the damage of vital data similar family photographs. Everybody relies on dangerous structure like influence plants, infirmaries, and monetary service businesses. Securing these and other societies is essential to trust our civilization operative. One and all also remunerations from the work of cyber threat investigators, similar the team of 250 risk investigators at Talos, whoever explore new and developing fears and cyber bout policies. They disclose new susceptibilities, teach the community on the position of cybersecurity, and toughen open source gears. Their work marks the Internet harmless for one and all.





## TYPES OF CYBER SECURITY

### 1. Phishing

Phishing is the rehearsal of distribution fake communications that look like emails from dependable sources. The goal is to bargain thoughtful data comparable to credit card details and login data. It's the greatest kind of cyber attack. You can help defend manually over learning or an expertise solution that sieves malicious electronic mail.

### 2. Malware

It is a type of software intended to gain illegal right to use or to cause impairment to a system.

### 3. Ransomware

It is a type of malicious software. It is considered to extract currency by blocking contact to records or the PC system until the deal is paid. Paying the ransom does not assurance that the records will be recuperated or the system returned.

## CONCLUSION

Today, we live in the age of technology, and everyone is dependent on it. We may say that technology is a watershed moment in the evolution of human life. Life has become more easier as a result of the rapid expansion and development of technology, but we have to pay a high price from time to time. Cybercrime has become a major menace to humanity in recent years. As a result, rigorous rules to govern technology are critical. INDIA, a country of 1.3 billion people, has the world's lowest data costs. With the advancement of the network, data and information security is becoming increasingly vital. According to this report, as internet and technology evolve, so will the spectrum of cyber dangers. To secure data, one must utilize cyber security measures such as firewalls, strong passwords, antivirus software, and exercise cyber-attack prevention. India's reactive method of securing cyber systems only after cyber security incidents arise has to be transformed into a proactive one. Because it is an urgent requirement. To defend rights and privacy and to preserve the rule of law, awareness, firm modifications, punitive provisions, and a cyber security policy are required.

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