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SCHOOL OF COMMERCE AND MANAGEMENT
CONTEMPORARY BUSINESS
TRENDS: EXPLORING
EMERGING PARADIGMS
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CONTEMPORARY BUSINESS TRENDS: EXPLORING EMERGING PARADIGMS

(Volume I)

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1. A Philosophical Study on Investors' Perspectives on Mutual Funds as An Investment Decision

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Abstract:

In this paper, design of shared asset, activities of common asset, examination between interest in shared asset and bank and computation of NAV and so on have been thought of. In this paper, the effects of different segment factors on financial backers' mentality towards shared asset have been considered. For estimating different peculiarities and dissecting the gathered information successfully and proficiently for making sound determinations, Chi-square test has been utilized and for breaking down the different elements answerable for interest in common assets, positioning was done based on weighted scores and scoring was additionally done based on scale.

Keywords:

Hypothesis, Chi-square () test, Rank, Weighted score and Scaling

Introduction:

A Mutual Fund pools the cash of individuals with specific speculation objectives. The cash put resources into different protections relying upon the destinations of the common asset conspire and the benefits (or misfortune) are divided between financial backers' in relation to their speculation. Interests in protections are spread across a wide cross-part of ventures and areas. Expansion diminishes the danger since all stocks may not move a similar way in a similar extent simultaneously. Common asset issues units to the financial backers' as per quantum of cash contributed by them. Financial backers' of shared assets are known as unit holders. The benefits or misfortunes are shared by the financial backers' in relation to their speculation. The shared assets typically come out with various plans with various venture targets which are dispatched occasionally. A common asset is needed to be enlisted with Securities and Exchange Board of India (SEBI) which manages protections markets before it can gather assets from people in general.

A Mutual asset is a trust that pools the reserve funds of some of financial backers' who share a typical monetary objective. The cash gathered from financial backers' is put resources into capital market instrument like offers, debentures and different protections. The pay procured through these speculations and the capital appreciations acknowledged are shared by its unit's holder in relation to the quantity of units possessed by them. In this manner a Mutual Fund is the most reasonable speculation to the everyday person as it offers a chance, to put resources into a differentiated, expertly oversaw crate of protections for generally minimal price.

Shared assets can be put resources into a wide range of sorts of protections. The most widely recognized are money, stock, and securities, yet there are many sub-classifications. Stock assets put fundamentally in the portions of a specific industry, like innovation or utilities. These are known as area reserves. Security assets can fluctuate as per hazard (e.g., high yield or garbage securities, speculation grade corporate securities), kind of backers (e.g., government organizations, partnerships, or regions), or development of the securities (short- or long haul). Both stock and security assets can put resources into fundamentally U.S. protections (homegrown assets), both U.S. what's more unfamiliar protections (worldwide assets), or principally unfamiliar protections (global funds). Most shared assets' speculation portfolios are persistently changed under the oversight of an expert supervisor, who estimates the future presentation of ventures fitting for the asset and picks those which the person accepts will most intently match the asset's expressed speculation objective. A common asset is directed through a parent the executives organization, which might recruit or fire reserve chiefs. Common assets are responsible to an exceptional arrangement of administrative, bookkeeping, and duty rules. Not at all like most different kinds of business elements, they are not burdened on their pay as long as they appropriate significantly every last bit of it to their investors. Additionally, the sort of pay they acquire is frequently unaltered as it goes through to the investors. Common asset circulations of tax-exempt metropolitan bond pay are likewise tax-exempt to the investor. Available circulations can be either customary pay or capital increases, contingent upon how the asset procured those appropriations.

A common is a set up as trust, which has support, trustee, resources the executives organization (AMC) and overseer. Support is the individual who acts alone or in blend with another body corporate and sets up a common asset. Support should contribute basically 40% of the total assets of the speculation oversaw and meet the qualification rules recommended under the Securities and Exchange Board of India (Mutual Funds) guidelines, 1996. The support isn't mindful or at risk for any misfortune or deficiency coming about because of the activity of the plans past the underlying commitment made by it towards setting up of Mutual Fund. The Mutual Fund is established as a confidence as per the arrangements of the Indian Trusts Act, 1882 by the Sponsor.

Trustee is normally an organization (corporate body) or a leading body of trustees (assemblage of people). The primary obligation of the trustee is to defend the premium of the unit holders and furthermore guarantee that AMC capacities in light of a legitimate concern for financial backers' and as per the Securities and Exchange Board of India (Mutual Fund) Regulations 1996 the arrangements of the Trust deed and the proposition Document of the separate plans. The AMC is named by the Trustees as the venture Manager of the Mutual Fund. The AMC is needed to be endorsed by SEBI to go about as a resource

the board organization of the Mutual Fund. The AMC provided that this is true approved by the Trust Deed names the Registrar and Transfer Agent to specialist the shared asset. The recorder processes the application structure, recovery demands and dispatches account proclamations to the unit holders. The Registrar and Transfer specialist additionally handles correspondences with financial backers' and updates financial backer records.

1.1 Net Asset Value:

The net resource worth, or NAV, is the current market worth of an asset's possessions, generally communicated as a for every offer sum. For most assets, the not really set in stone day by day, later the end of exchanging on some predetermined monetary trade, yet a few supports update their NAV on numerous occasions during the exchanging day. Open-end finances sell and reclaim their portions at the NAV, thus process orders solely after the not really settled. Shut end reserves (the portions of which are exchanged by financial backers') may exchange at a sequential cost than their NAV; this is known as a premium or rebate, separately. On the off chance that an asset is partitioned into numerous classes of offers, each class will regularly have its own NAV, reflecting contrasts in charges and costs paid by the various classes. Some common finances own protections which are not routinely exchanged on any conventional trade. These might be shares in tiny or bankrupt organizations; they might be subsidiaries; or they might be private interests in unregistered monetary instruments (like stock in a nonpublic organization). Without even a trace of a public market for these protections, it is the obligation of the asset chief to shape a gauge of their worth when processing the NAV. The amount of an asset's resources might be put resources into such protections is expressed in the asset's plan.

1.2 Computation of Nav:

The most significant of the computation is the valuation of the resources owed by the assets. Whenever it is determined, the NAV is basically the net worth of resources partitioned by the quantity of units exceptional. The definite technique for the computation of the resource esteem is given underneath. Net Asset esteem = Sum of market worth of offers/debentures + Liquid resources/cash held (assuming any) + Dividends/premium gathered Amount due on neglected resources - Expenses accumulated however not paid

1.3 Objective of The Study:

1. To study and dissect the effect of different segment factors on financial backers' ' demeanor towards common asset.
2. To learn about the variables (based on rank) answerable for the determination of shared assets as a venture choice.

2.0 Review of Literature:

Tadashi Endo. (2020) from The Nikko Securities co. Ltd. Tokyo, Japan explained precisely in their book titled "The Indian Securities Market- A Guide for Foreign and Domestic Investors". The Indian capital markets appear mysterious and puzzling to many foreign investors and even to domestic Indian investors.

He explained that, there is no current information materials which comprehensively addresses investors' concerns about this rapidly-growing market. He have tries to do is shed some light on practices and rules in the Indian market, including the problematic ones, so that foreign as well as Indian investors can look at market more rationally for their portfolio investments in Indian securities.

The Indian Financial system is regulated and supervised by two government agencies under the Ministry of Finance.

- i. The Reserve bank of Indian, India's Central bank, and
- ii. The Securities Exchange Board of India, the Country's capital market regulators

He explained that all parts of the system are interconnected with one another, and the jurisdictions of the central bank and the capital market regulator overlap in some fields of Indian financial activities.

This book focuses on the capital markets of India under the later, and primarily covers the areas involving the regulator and the market participants, as highlighted in the chart.

The Indian capital markets change amazing quickly. Indian people in the securities industry attribute the lack of comprehensive information materials about their market to the rapid and incessant changing of rules and regulations. Yet, he believe that investors , foreign and Indian alike, need something like a benchmark from which they can develop their knowledge and understanding of this market.

Gormsen & Koijen (2020) have considered the use of information from the accumulated equity market and dividend futures to compute how investors' anticipation about economic progress beyond boundaries emerge as a reaction to the coronavirus outbreak and subsequent policy feedback. It has been observed by authors that change in investor perception drives the willingness to trade and take risks.

This is mainly due to the poor performance of the stock market during the financial crisis. Other variables impacting investor behaviour include ability of investors to buy shares; tax implications; dividend expectations; risks involved; and capital gains.

Syed Kumail Abbas Rizvi, Nawazish Mirza, Bushra Naqvi and Birjees Rahat (2020) survey the exhibition and venture styles of resource the board organizations in EU during the pandemic. According to the analyst, the asset directors have been floating from high danger choice to okay as far as size and speculation technique. Additionally, there has been a change from high danger to moderately less touchy areas and a progress of speculation from nations with higher to those with lower number of cases.

Singh and Jha (2009) directed a review on mindfulness and agreeableness of shared assets and observed that purchasers fundamentally lean toward common asset because of return potential, liquidity and wellbeing and they were not absolutely mindful with regards to the orderly money growth strategy. The invertors' will likewise think about different variables prior to putting resources into shared asset.

Anand and Murugaiah (2004) had concentrated on different key issues identified with the showcasing of monetary administrations. They observed that as of late this sort of industry requires new procedures to get by and for activity. For enduring they need to embrace new promoting techniques and strategies that empower them to catch most extreme freedoms with the least dangers to empower them to make do and meet the opposition from different market players around the world.

3.0 Research Methodology:

The review is fundamentally a scientific review dependent on essential examination just as additionally identified with the investigation of the mentality of financial backers' ' towards shared assets. To direct this review, 250 financial backers' in Ranchi locale have been chosen by testing strategy and primarily poll has been utilized for gathering the information

Every one of the information needed for this logical review has been acquired fundamentally from essential sources, however on occasion, auxiliary wellsprings of information have additionally been thought of.

The information assortment technique used to get the ideal data from essential sources has experienced direct meeting and survey has been utilized as an instrument.

Fundamentally, designated populaces have a place with the Ranchi district and thinking about a singular financial backer as an examining unit. Judgment inspecting has been utilized for colleting the example.

For estimating different peculiarities and examining the gathered information viably and productively to make sound inferences, various measurable methods essentially Chi-square test for testing of speculation has been utilized and for investigating the different variables liable for interest in shared assets, positioning was done based on weighted scores and scoring was done based on scale.

Chi-Square trial of decency of fit has been utilized. It is a strong test for testing the meaning of the disparity among hypothesis and analysis as given by Karl Pearson. It empowers us to find assuming the deviation of the analysis from hypothesis is simply by some coincidence or it is truly because of the insufficiency of the hypothesis to fit the noticed information.

On the off chance that O_i , ($i=1, 2... n$) is a bunch of observed(experimental) frequencies and E_i ($i=1,2,... \dots n$) is the relating set of expected(theoretical or speculative) frequencies ,then, at that point, Karl Pearson's Chi-Square is given by

$$\chi^2_{(n-1)} = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i} \quad \text{where} \quad \sum_{i=1}^n E_i = \sum_{i=1}^n O_i$$

follow Chi-Square conveyance with $(n-1)$ d. f. This is an estimated test for huge upsides of n .

3.1 Testing of Hypthesis:

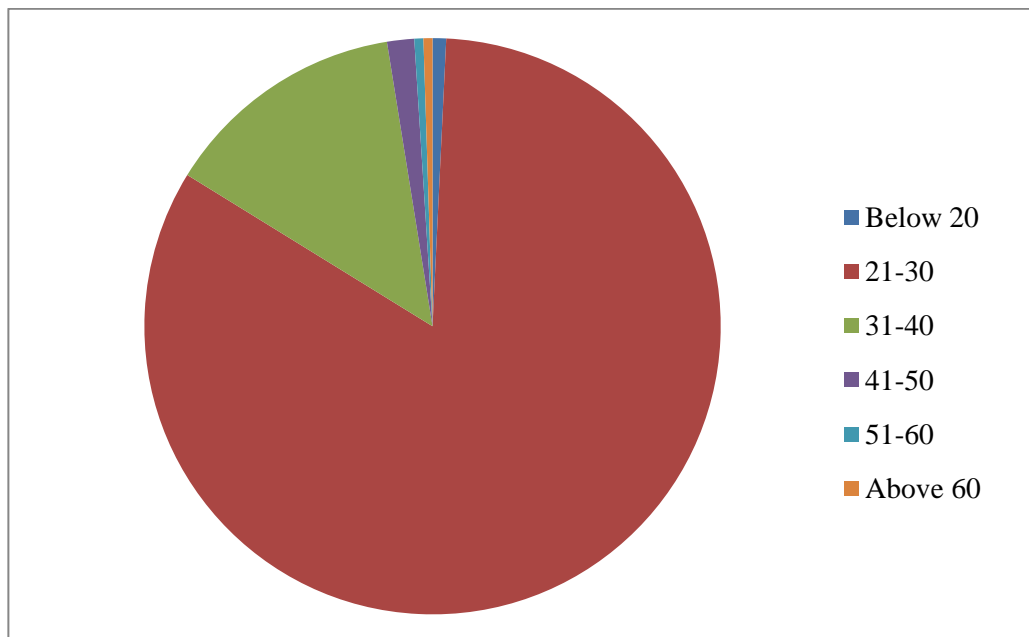
The accompanying theories have been taken for the investigation of financial backers' disposition common assets.

- There is no relationship among age and the demeanor towards common assets.
- There is no relationship among sex and the demeanor towards common assets.
- There is no relationship among pay and the demeanor towards common assets.
- There is no relationship between educational capability and the demeanor towards common assets.
- There is no relationship between occupation and the demeanor towards common assets.

4.0 Data Analysis:

Table I. Association between age and attitude towards the mutual fund

Investor Category Sample Data - Age

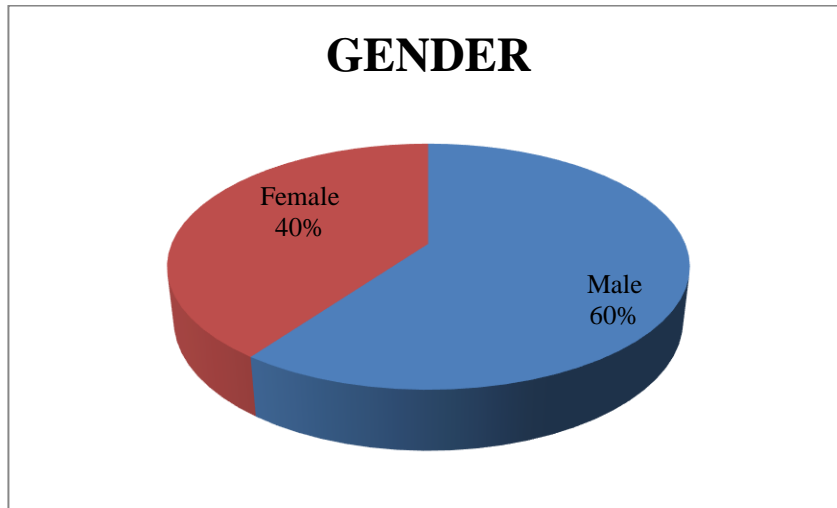


Source: Primary Data – Question 3 of Investor Category Questionnaire

The age of male and female of the investor group of respondents is shown in Chart 5.02. From the pie chart it was observed that the total no of investors less than 20 years was 3. The respondent in the age group 21 to 30 were 328 The respondent in the age group 31 to 40 were 54. The respondent in the age group 41 to 50 were 6. The respondent in the age group 51 to 60 were 2 and the respondent in the age more than 60 years were 2

Table II. Association between gender and attitude towards the mutual fund

Investor Category Sample Data – Gender

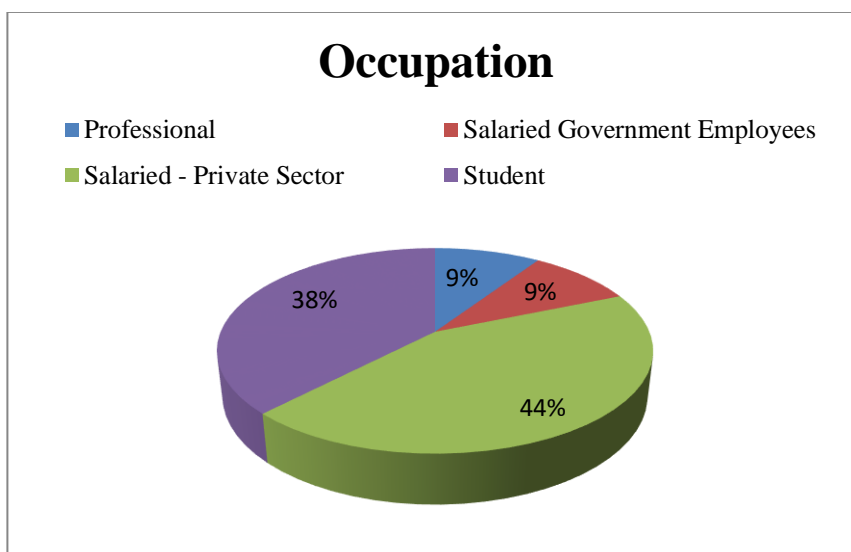


Source: Primary Data – Section A- Question 2 of Investor Category Questionnaire

In the above pie chart 4.01 shows that in the sample survey of 395 people were divided into male and female along with their investment attributes in which the male respondent were 237 i.e 60% and female respondent were 158 i.e 40%

Table III. Association between occupation and attitude towards the mutual fund

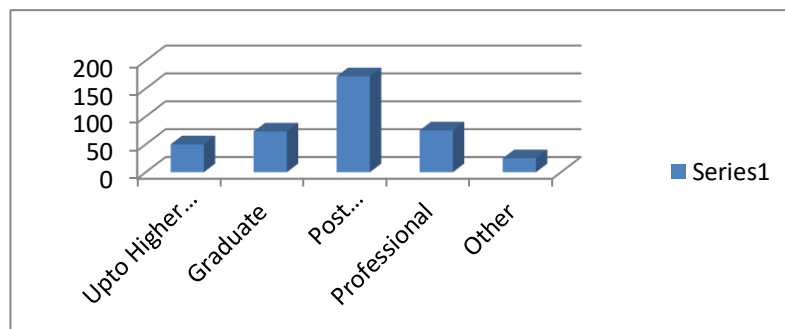
Investor Category Sample – Occupation



There were 9% investors belongs to professional category.9% investors are belongs to Government service and 44 % of the investors were belong to slaries person from private sector and remaining 44% were students.

Table IV. Association between level of education and attitude towards the mutual fund

Investor Category Sample Data - educational qualification



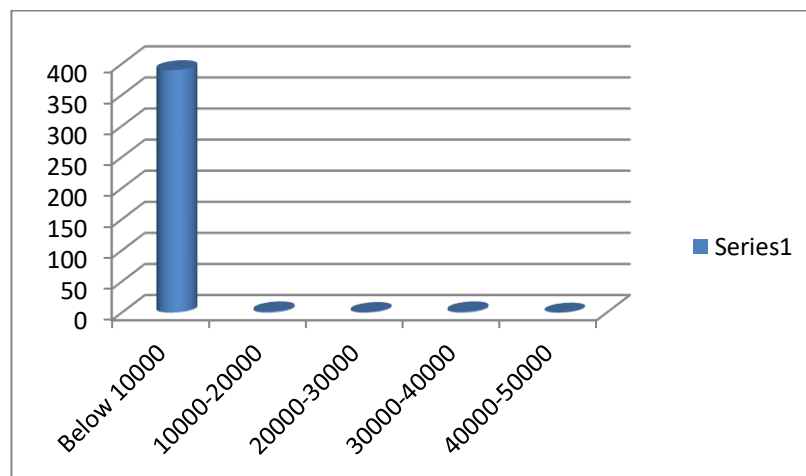
In this sample survey the educational qualification also play an important role to understand the investors behavior in financial market investment.

The educational qualification of the survey respondents is shown in Chart.

4.03. Out of a total 395 respondent, Graduates were 73, Post Graduates were 173, Professionals were 73 higher secondary were 50 and others were 25

Table V. Association between level of Income and attitude towards the mutual fund

Investor Category Sample – Monthly Savings



Source: Primary Data – Question 7 of Investor Category Questionnaire

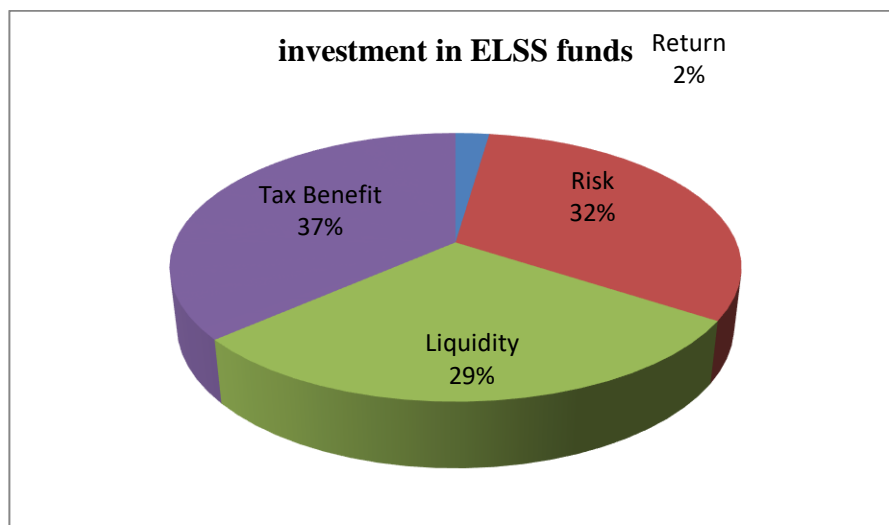
As per the bar diagram, the monthly saving or investment below 10000 belong to 390 respondent, the monthly saving or investment between 10000 to 20000 belong to 2 respondent.

The monthly saving or investment between 20000 to 30000 belongs to 2 respondents. The monthly saving or investments between 30000 to 40000 belong to 2 respondents. The monthly saving or investment between 40000 to 50000 belongs to 2 respondents.

Table VI. Various factors responsible for investment in mutual funds

Weightage in term of Investment in ELSS Mutual funds:

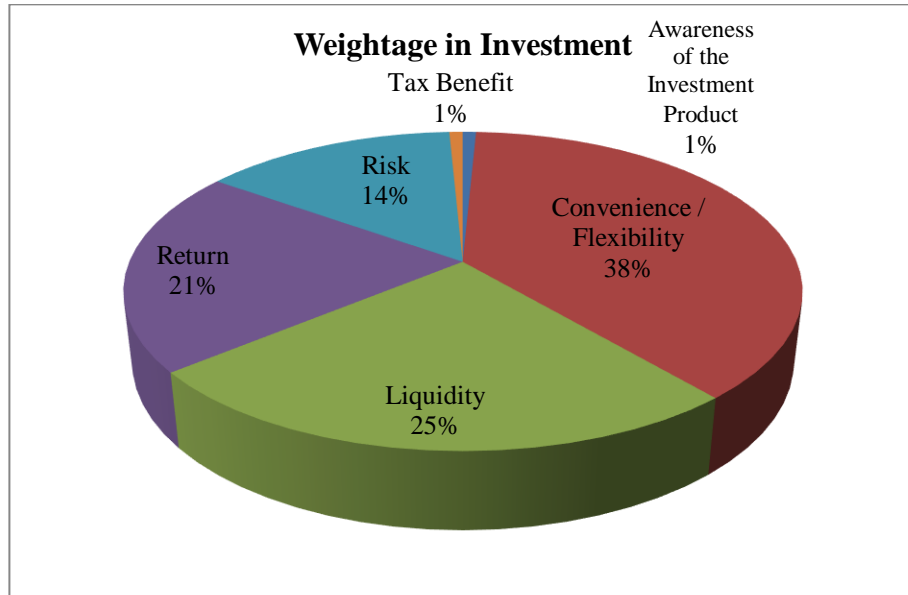
As shown in the diagram, investment attributes has given 37% weightage to tax benefit in term of investment in ELSS funds.29% of investment attributes has given weightage to liquidity to maintain their cashflow in the future outcomes in term of investment in ELSS funds. 32% of investment attributes has given weightage to risk factors to in term of investment in ELSS funds and 2 % looking for return in their investment.



Source: Primary Data – Section B- Question 2 of ELSS Investor Category Questionnaire

Weightage in term of Investment in Growth mutual funds:

The preference of various investment attributes is given in chart 4.3(section B). According to investors point of view 38 % of investors has given weight age on Convenience / Flexibility and as per the present situation they are decided to investment in different financial alternatives. and given more weighting on Convenience / Flexibility. 25% of investors are believed on liquidity and looking for cash flow in their investment.21% of the investor are looking for return in their investment as the volatile nature of the financial markets.14% of the investors are taking risk a an important factors in their investment.1% of the investors willing to invest in growth funds but looking for tax benefits also and 1% investors are looking for awareness of the investment product



Source: Primary Data –Section B- Question 3 of Growth fund Investor Category Questionnaire

5.0 Findings:

Growth Mutual Funds- Primary Data –Analysis:

Correlation

		Gender	Age	How long have you been investing in growth mutual funds	Monthly average saving	Educational qualification
Gender	Pearson's correlation	1	-0.30	-0.006	-0.039	0.21
	Sig (2 –tailed)		0.291	0.832	0.173	0.473
	N	1201	1201	1201	1201	1201
Age	Pearson's correlation	-0.30	1	0.087**	0.402**	0.011
	Sig (2 –tailed)	0.291		0.003	0	0.7
	N	1201	1201	1201	1201	1201

		Gender	Age	How long have you been investing in growth mutual funds	Monthly average saving	Educational qualification
How long have you been investing in growth mutual funds	Pearson's correlation	-0.006	0.087**	1	0.091**	0.021
	Sig (2 –tailed)	0.832	0.003		0.002	0.464
	N	1201	1201	1201	1201	1201
Monthly average saving	Pearson's correlation	-0.039	0.402**	0.091**	1	0.024
	Sig (2 –tailed)	0.173	0	0.002		0.404
	N	1201	1201	1201	1201	1201
Educational qualification	Pearson's correlation	0.21	0.011	0.021	0.024	1
	Sig (2 –tailed)	0.473	0.7	0.464	0.404	
	N	1201	1201	1201	1201	1201

Note: **Correlation is significant at the 0.01 level(2-tailed)

The above statistical data using SPSS shows that in term of karl Pearson's coefficient of correlation, there is a very weak negative correlation (-0.030) between gender and age factors. In gender and time duration for investing in growth mutual funds, there is a very weak negative (-0.006) correlation between them and the variables move in the opposite direction/, The correlation.

In the present situation young generation are more focusing in the investment in growth mutual funds by taking risk and looking for capital appreciation and as older age group people are not taking any risk by investing in growth mutual funds and looking for some alternative investment attributes during the COVID-19 situation due to the highly volatile nature of the Indian mutual funds industry.

Karl Pearson's coefficient of correlation between the variables X and Y is given by

$$R = \text{Cov}(X, Y) / [\text{STDEV}(X) * \text{STDEV}(Y)]$$

Karl Pearson’s coefficient of correlation is not affected by change in scale or by change in location. Unlike covariance it can be used to compare the relationship between two pairs of variable. It is a unit free measure of relationship between two variables and takes value in[-1,=1]. When r is close to +1 or -1, there is strong positive or negative relationship between the two variables.

Frequency Table -**Growth Mutual Funds**- Age

Frequency	Percent	Valid Percent	Cumulative Percent		
Valid		427	51.9	51.9	51.9
	21-30	348	42.3	42.3	94.3
	31-39	10	1.2	1.2	95.5
	31-40	32	3.9	3.9	99.4
	41-50	3	0.4	0.4	99.8
	51-50	1	0.1	0.1	99.9
	51-60	1	0.1	0.1	100
	Total	822	100	100	

The above statistical data using SPSS shows that most of the young generation age between 21 to 30 are willing to invest in growth mutual funds. There are so many reasons to invest in mutual funds. They wish to create wealth or to fulfill the long-term financial goals to meet their future requirement. A risk factors are involved in the investment of mutual funds and its mainly depends on the risk-taking capacity of the investors by choosing the growth funds which gives a better return with capital appreciation.

1. One way - ANOVA – Growth funds- Gender:

		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	1.608	3	0.536	2.455	0.062
	Within Groups	261.396	1197	0.218		
	Total	263.004	1200			

In the statistical data of IBM SPSS Web Report, degree of freedom is 3 and level of significance (0.062) which is less than the F(2.455) and so that we reject the null hypothesis which states that there is no significance difference in the investment of Growth mutual

funds due to gender and accept the alternative hypothesis(H1), which states that there is a impact of gender in the investment in Growth mutual funds Mutual funds investment to risk factors due to open market operation so that gender wise investment play a vital role for the future investment.

6.0 Conclusion:

The review shows that a large portion of respondents are as yet befuddled with regards to the common assets and have not shaped any disposition towards the shared asset for venture reason. It has been seen that the vast majority of the respondents having absence of mindfulness about the different capacity of shared assets. Besides, all things considered, sex, pay and level of schooling have altogether impact the financial backers' ' demeanor towards shared assets. Then again the other two segment factors like age and occupation have not been found affecting the mentality of financial backers' ' towards shared assets. To the extent the advantages given by common assets are concerned, return potential and liquidity have been seen to be generally alluring by the invertors' trailed by adaptability, straightforwardness and moderateness. Separated structure the abovementioned, in India there is a great deal of extension for the development of common asset organizations given that the assets fulfill everyone's necessities and sharp enhancements in help guidelines and divulgence.

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2. A Study of Marketing Benefits of Social Networking Websites

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Introduction:

The availability of internet has revolutionized the ability of man to stay connected with others. Today, internet had surpassed the traditional media as primary source of getting information. Internet has also changed the way the businesses can contact and persuade the existing and potential customers. It is driving the new ways of doing business, and it is no exaggeration to say that that marketing is undergoing a paradigm shift, in large part, to the internet, social media and social networks. The role of marketing has changed, and the social media is assisting that change. The traditional tools are getting outdated and have also reached the saturation point. (Daniasa et al.,2010).

The new era customers are the same persons whom the firms used to target using traditional media like newspapers, television and billboards (Dan, 2006). The only difference is that their behavior as 'individuals' and as 'customers' have changed because of their increasing presence on the new 'virtual market spaces' like social networking sites such as Facebook, Twitter, LinkedIn, etc. These are the 'places' where they interact resulting in new expectations, new rules, new topics that drives them to be actively present on these platforms.

Marketing to the target customers is not about telling the brand's features and stories and being a one-sided speaker only; rather the marketer has to sail on the ship of two-sided communication. The social platforms provide them the opportunity to know their customers and accordingly redefining and redesigning their marketing-mix.

The traditional-to-online social media shift has been possible due to technological breakthroughs which have made communication possible 'anywhere' and 'everywhere' to 'anyone' and 'everyone' who has a presence online across the globe. The past few years have witnessed a fundamental shift towards the customer-driven and two-way communication enabling technology platforms such as blogs, video-sharing platforms, social media, etc. (Weber,2007).

Objectives of the Study:

It is truly said that “*A study without objectives is like a tree without roots*”. In this study, the prime objective is to identify the opportunities of the marketing through the social networking sites.

Significance of the Study:

An increasing number of people are shifting from traditional media like television, newspaper sect. to new age media. Virtual world is the new ‘place’ where the target customers are present and are spending a lot of time. The experts have identified these new emerging platforms and recommend the same to be used by the organizations to achieve their respective marketing objectives and concomitantly, marketing is also undergoing a paradigm shift in its elements adapting to the new technology and making it a significant element of their marketing communication strategy. This study is primarily focused on finding out the opportunities available to the marketers as well as the challenges facing them while marketing through social networking sites.

Sample Design:

The sample units were the people, with different demographic profiles, who are the members of one or more social networking sites like Facebook, Tweeter, Orkut, LinkedIn, etc. The sample size for this research study was 410 respondents. The sample area was National Capital Region. The respondents were selected on the basis of simple random sampling technique.

Analysis of data using different statistical tools

Table 1.01: Gadget/machine used for accessing internet.

Response	Frequency	Percent
Mobile Phones	244	59.5
Personal computer	64	15.6
Laptop	321	78.2
Tablet	40	9.7
Others	21	5.1

Source: Primary data

1.01 Gadget/Machine used for Accessing Internet:

The table depicts various gadgets that the respondents use for accessing the internet. It is clear that the respondents use variety of gadgets for having access to the internet. 244 respondents (about 60 percent) access the internet with the help of mobile phones, 64 respondents (about 16 percent) use personal computer for internet access.

Majority of respondents i.e.321 (about 78 percent) use laptop for the internet access while 40 respondents (about 10 percent) use tablets for internet usage and 21 respondents (about 5 percent) used other gadgets for accessing internet.

This can be interpreted from the table that the respondents prefer those gadgets which are mobile in nature so that they can access internet wherever they are.

Table 1.02: Place of accessing the internet and social networking sites

Response	Frequency	Percent
Office	196	47.8
Mobile Phone	244	59.5
Home	189	46.1
Tablet	40	9.8
Cybercafé	21	5.1
Others	0.0	0.0

Source: Primary data

1.02 Place of Accessing the Internet and Social Networking Sites:

The table 1.02 presents the information about different places of accessing the internet and social networking sites. It is clear that majority of the respondents (about 60 percent) access the internet and social networking sites on their mobile phones.

Also 196 respondents (about 48 percent) access the internet and social networking sites in their 'offices' too which indicates that access to social networking sites is available in their offices.

Table 1.03: Membership of Various Social Networking Sites:

Response	Frequency	Percent
Facebook	389	94.9
Twitter	181	44.1
YouTube	65	15.9
Myspace	11	2.7
LinkedIn	146	35.6
Ibibio	11	2.7
Orkut	89	21.7
Others	121	29.5

Source: Primary data

1.03 Membership of Various Social Networking Sites:

Perusal of table 1.03 shows membership of the respondents of various social networking sites. It is clear that Facebook is the most popular social networking site with 46 percent of their spendings being the member of this site. The literature studied also reflects the same trend. This is followed by Twitter and LinkedIn with 44 percent and 35 percent respondents having the membership of the same respectively.

Table 1.04: Time spent per week on social networking sites:

Response	Frequency	Percent
0-5Hours	72	17.6
6-10Hours	113	27.6
10-20Hours	145	35.4
20-30Hours	41	10.0
Morethan30Hours	39	9.5
Total	410	100.0

Source: Primary data

Time spent per week on social networking sites:

The table 1.04 depicts that the respondents spend a lot of time on social networking sites as 35percent of the respondents spend 10-20 hours weekly on the social networking sites, about 28 percent spend 6-10 hours weekly on social networking sites. It is clear that on an average respondents spend 1-3 hours per day on social networking sites. This is another significant opportunity for the marketers. People spend a lot of time on internet, specifically on various social networking sites. It is must for the marketers to have their strong presence on the social networking sites, so that people can view the brands during the time that they are spending on social networking sites.

Table 1.05: Personal information uploaded on social networking sites:

Response	Frequency	Percent
Email Id	114	27.8
Age	87	21.2
Phone Number	122	29.8
Relationship Status	198	48.3
Hometown/ City	288	70.2
Interest areas	163	39.8
Music Choice	99	24.1
Movies	87	21.2

Response	Frequency	Percent
Books	85	20.7
Passion	10	2.4
Sports	67	16.3
Activities	54	13.2
T.V. Shows	76	18.5
Profession	166	40.5
Other	35	8.5

Source: Primary data

1.05 Personal Information Uploaded on Social Networking Sites:

The table 1.05 depicts one of the most significant implications and opportunities for the marketers. It is clear that the respondents who are the members of one or more social networking sites have included one or the other personal information on their respective account on the social networking site(s).

The respondents have included their personal information like email id, their interest areas, their choice of books, music, sports; activities; profession etc. All such kind of specific information seem to be highly beneficial for the marketers in order to promote the products as per the interest area/profession etc. of the target customers who are present on various social networking sites. This may also pose a challenge for the marketers that they may have to face certain issues in case the correct information is not available.

Table 1.06: Reasons for joining social networking sites

Response	Frequency	Percent
Networking	221	53.9
Socializing	330	80.5
Entertainment	278	67.8
Keeping oneself up to date	133	32.4
Exchange of Information	190	46.3
Others	183	44.6

Source: Primary data

1.06 Reasons for Joining Social Networking Sites:

The table 1.06 presents the reasons that the respondents have for joining one or more social networking sites. 54 percent of the respondents communicated that networking is one of the significant reasons for joining a social networking site, 80 percent reported that socializing is the most important reason for the same, 46 percent reported that exchange of information

with the counter members is their motivation behind joining one or more social networking sites, 68 percent responded that entertainment is the reason behind joining social networking sites. Therefore, it can be interpreted that respondents are joining social networking sites for variety of reasons like entertainment, socializing.

It is a challenge for the marketers that people look for entertainment, networking etc. and therefore, the content of the marketer has to be interesting and entertaining enough to grab the attention of the target customers.

Table 1.07: Banon access to social networking sites in offices

Response	Frequency	Percent
Yes	46	11.2
No	174	42.4
Not professional	190	46.3
Total	410	100.0

1.07 Banon Access to Social Networking Sites in Offices:

The table 1.07 depicts that out of about 54 percent respondents who are professionals, about 43percent responded that there is no ban on access of social networking sites in their offices. Therefore, it can be safely concluded that it is heartening for the marketers to note that the people can access the social networking sites during their workhours too.

Table 1.08: Notice of offers/advertisements/community/pages on social networking sites

Response	Frequency	Percent
Yes	131	32.0
No	279	68.0
Total	410	100.0

Source: Primary data

1.08 Notice of Offers/ Advertisements/ Community/ Pages on Social Networking Sites:

A perusal of table 1.08 shows whether respondents notice any kind of advertisements/brand pages on their respective account on social networking site(s). About 32 percent reported that they notice one or the other kind of advertisements/brand pages/community pages etc. on the social networking sites.

Therefore, it is an opportunity for the marketers that social networking sites can also serve as a medium to promote the respective brands. However, It is also a challenge for the marketers as to how to make people notice their promotional content.

Table 1.09: Information received on new product/offers via social networking sites

Response	Frequency	Percent
Yes	101	24.6
No	309	75.4
Total	410	100.0

Source: Primary data

1.09 Information Received on New Product/Offers via Social Networking Sites:

The table 1.09 makes it obvious that about 25 percent of the respondents like to receive some kind of information on new product or offers etc. through advertisements/community pages on social networking sites. It can be deduced that social networking sites can be used as an additional medium for communicating information about the product-features, sales promotion offers, etc.

Table 1.10: Uploading of photographs of products recently purchased.

Response	Frequency	Percent
Yes	61	14.9
No	349	85.1
Total	410	100.0

1.10 Uploading of Photographs of Products Recently Purchased:

The table 1.10 presents that about 15 percent of the respondents have uploaded the photographs of the product(s) of their recent purchase(s). It seems that such conversations and flaunting recent purchases is a new trend, which is likely to gain momentum in the times to come.

This uploading straightaway means that the customers have started generating contents related to brands. It can also be interpreted that the customers are able to generate the electronic word of mouth on social networking sites.

Table 1.11: Liking a brand page because of counter-members' likes.

Response	Frequency	Percent
Yes	119	29.0
No	291	71.0
Total	410	100.0

Source: Primary data

1.11 Liking a Brand Page because of Counter-Members 'likes:

When the table 1.11 is per used, it becomes clear that 29 percent of the respondents have liked/joined a brand page because their friends (counter-members) on those social networking sites have also liked/joined that particular page. This phenomenon indicates the viral impact that happens on social networking sites have a high 'viral' impact. The viral impact is even more influential from a marketers' view point as the previous studies have in disputably said that the people tend to believe more on what is said by others rather than the information pushed by the marketers.

Table 1.12: Information sharing on recent purchases

Response	Frequency	Percent
Yes	188	45.9
No	222	54.1
Total	410	100.0

Source: Primary data

1.12 Information Sharing on Recent Purchases:

The table 1.12 informs that about 46 percent of the respondents have shared information about their recent purchases on social networking sites. This can be interpreted that the people create the information, pass the information to others, which may also influence the decision-making process of others. It would be in fitness of the things to mention here that if individual uploads information of recently acquired products others too in all probability would get motivated to flaunt their purchases. This 'viral impact' has significant implication for the marketers.

Table 1.13: Opinion sharing on social networking sites

Response	Frequency	Percent
Yes	156	38.0
No	254	62.0
Total	410	100.0

Source: Primary data

1.13 Opinion Sharing on Social Networking Sites:

The table 1.13 gives a clear picture of respondents' views on sharing their opinions on social networking sites. It is seen that 156 respondents (about 38 percent) have asked for others' opinions on social networking sites, before taking a purchase-decision.

Therefore, it is assigned if can't implication for the marketers that social networking sites are a significant platform for information -sharing and electronic word of mouth generation among the customers.

Table 1.14: Future-purchase affected by number of likes on social networking sites.

Response	Frequency	Percent
Yes	58	14.1
No	352	85.9
Total	410	100.0

Source: Primary data

1.14 Future-Purchase Affected by Number of Likes on Social Networking Sites:

The table 1.14 reveals that about 14 percent of the respondents communicated that their future-purchases stands affected by the number of likes on a particular product/ brand on the social networking sites. This is clear that individuals have the ability to influence each other's decisions and generate electronic word of mouth.

Table 1.15: Information sought on social networking sites.

Response	Frequency	Percent
Yes	156	38.0
No	254	62.0
Total	410	100.0

Source: Primary data

1.16 Information Sought on Social Networking Sites:

The table 1.16 depicts that about 38 percent of the respondents have reported that they sought different types of information on social networking sites before taking a purchase-decision. It may be interpreted that social networking sites can also serve as a platform/source for searching information regarding a product. Therefore, the marketers need to have a strong presence on social networking sites, with the availability of the adequate requisite information.

Table 1.17: Kind of information-sought on social networking sites

Response	Frequency	Percent*
Price	36	23.0
Reviews	77	49.3

Response	Frequency	Percent*
Features	108	69.2
Performance	23	14.7
Competing Brands' information	61	39.1
Others	35	22.4
*N=156		

Source: Primary data

1.17 Kind of Information-Sought on Social Networking Sites:

The table 1.17 depicts the kind of information sought by the respondents on social networking sites related to a product. It is indicated by the table 1.16 that only 156 out of 410 respondents seek one or the other kind of information about a product on social networking sites. This question has been asked to only those respondents who have indicated that they seek information on social networking sites regarding a product.

The respondents have given multiple answers in response to this question. It is evident from this table that as high as about 69 percent look for features of the product, 49 percent look for reviews about the specific products and about 39percent seek information about the competitive brands information. It is surprising to see that only 23 percent respondents look for the price of the product. It seems that the Indian respondents who seek information on products on social networking sites are far more quality conscious and quite less price conscious.

Table 1.17: Customers'engagementthroughcontests/quiz/games/activities/puzzles

Response	Frequency	Percent
Yes	135	32.9
No	275	67.1
Total	410	100

Source: Primary data

1.17 Customers' Engagement through Contests/Quiz/Games/Activities/Puzzles:

In order to start the process of customer-engagement, marketers have to take some initiatives which catch the people off-the-cuff. The table informs about customers' engagement through different tools like contests, quizzes, games, activities, puzzles, general knowledge tests, etc. About 33 percent of the respondents communicated that they have participated in such contests/ quizzes etc. that were promoted by some brand/organization on any social networking sites. It can be interpreted that the customers can be engaged indirectly through the use of elements like contests, games, puzzles, etc.

Table 1.18: Category of products’ information sought

Response	Frequency	Percent
Home Décor	12	2.9
Electronic Items	56	13.7
Home Appliances	31	7.6
Apparels	8	2
Mobile Phones	135	32.9
Fashion Products	9	2.2
Reading Material	18	4.4
Financial Products	8	2
Educational Institutions	23	5.6
Hospitals	13	3.2
Others FMCGs	16	3.9
Others	12	2.9

Source: Primary data

1.18 Category of Products’ Information Sought:

The table depicts the different categories of product information that people seek on social networking sites. It is very clear that ‘mobile phones’ are the most popular product-category that people look for on social networking sites as 32.9 percent respondents have reported so. 13.7 percent seek information regarding ‘electronic items. People also look for other items like ‘home appliances and services like ‘educational institutions’, ‘hospitals’ and ‘financial products. Therefore, the marketers especially those dealing in the product categories like mobile phones, electronic items, etc. Must have a presence on social networking sites.

Table 1.19: Liking a page for lucky draw/procurement of free samples.

Response	Frequency	Percent
Yes	54	13.2
No	356	86.8
Total	410	100.0

Source: Primary data

1.19 Liking a Page for Lucky Draw/Procurement of Free Samples:

The table 1.19 suggests that 13.2 percent of the respondents have liked/joined brand pages on one or the other social networking site for the reason of procuring free samples. Free samples always have been many takers and as such it is a surprise that such a small

percentage of respondents have liked a page for free samples. It can be explained that either the respondents do not have the information on this aspect, or they suspect it as some kind of joke or trap. Considering these possibilities, marketers would have to think outside the box solutions to tempt people towards lucky draws and free samples.

Table 1.20: Sharing of dissatisfaction on social networking sites.

Response	Frequency	Percent
Yes	74	18.0
No	336	82.0
Total	410	100.0

Source: Primary data

1.20 Sharing of Dissatisfaction on Social Networking Sites:

The table explains one of the most significant implications for the marketers. It reveals that 18percent of the respondents have shared their dissatisfaction from a product on social networking sites. It can be interpreted that people tend to share their satisfaction and of course dissatisfaction with others through different ways. Social networking sites have provided them the forum and platform for doing the same in a very loud and clear way. This is a well-researched fact that dissatisfied customers talk about it to a lot more people than the satisfied ones do. The power of dissatisfied customers to give a vent to their feelings multiplies many folds on social networking sites. Earlier the dissatisfied customers did not know how to complain, to who to complain, where to complain as well as whether their complaint would be listened to and addressed. The social networking sites have empowered the customers in this respect. Moreover, due to the fear of negative word of mouth through social networking sites, the marketers would put the best of their efforts in supplying best quality products and providing no chances of dissatisfaction to the customers.

Table 1.21: Way of providing feedback.

Response	Frequency	Percent
Yes	292	71.2
No	118	28.8
Total	410	100.0

Source: Primary data

1.21 Way of Providing Feedback:

The table depicts the opinion of the respondents if they feel that social networking sites are a good platform for providing feedback to the marketers. A majority of respondents i.e. 293 (71percent) feel that social networking sites are a good way for the customers to provide

feedback to the customers. The interpretation of this table corroborates and extends the ‘customer empowerment’ which has been pointed out in the analysis of earlier table also. Customers do not want to go through the rigmarole of cumbersome procedures marketers have created for registering complaints; rather they want where they may express their opinions at their own sweet will in an open and free environment.

Table 1.22: Privacy violation after information-sharing on social networking site

Response	Frequency	Percent
Yes	18	4.4
No	392	95.6
Total	410	100.0

Source: Primary data

1.22 Privacy Violation after Information-Sharing on Social Networking Site:

The table 1.22 depicts whether the respondents feel that their privacy was violated after sharing their personal information on the brand page/community on some social networking sites. 96percent respondents feel that they did not face any such issues of privacy violation after sharing their personal information on a brand page/community. It is an important implication for the marketer that they are readily available with the personal information of the target customers and people have no issues in sharing the same with the marketers.

Table 1.23: Notice of the promotional elements on social networking sites

Response	Frequency	Percent
Advertisement(s)that appear at Login/Logout	298	72.7
Advertisement(s)that appear at right side of site page	72	17.6
Information on number of Likes on a particular Brand	24	5.9
Information through Product Page/Community	16	3.9
Total	410	100.0

Source: Primary data

1.23 Notice of the Promotional Elements on Social Networking Sites:

The table 1.23 depicts the placement of promotional element on social networking sites which are most noticeable to the respondents. It is clear that an overwhelming majority of the respondents i.e., about 73 percent notice the advertisements that appear at the time of login/logout, followed by 17 percent respondents who notice the advertisements that appear on the right side of the social networking sites. It can be interpreted that marketers can advertise their product/brand using the login/logout points as they are the most noticeable to the target customers.

Table 1.24: Skipping of advertisement son YouTube.

Response	Frequency	Percent
Yes	102	30.2
No	150	44.4
Don't know how to skip	86	25.4
Total	338	100.0

Source: Primary data

1.24 Skipping of Advertisements on YouTube:

This question has been asked from those 338 respondents who watch videos on YouTube. The table 1.24 informs that about 30 percent respondents skip the advertisements that appear before the primary video on the site 'YouTube'. About 44 percent reported that they do not skip the advertisement and watch the advertisement video. Out of these, 21 percent watch the advertisements because they do not know how to skip the same.

Table 1.25: Brand recommendation to counter-members

Response	Frequency	Percent
Yes	115	28.0
No	295	72.0
Total	410	100.0

Source: Primary data

1.25 Brand Recommendation to Counter-Members:

The table makes it clear that 28 percent of the respondents have recommended one or more brands to their friends/counter-members on social networking sites. This is an opportunity for the marketers that people tend to share their opinions with others and social networking sites are emerging as a novel and innovative platform for them where they can share their opinions, provide suggestions to others regarding different brands. This is the way electronic word of mouth may get generated and spread through the social networking sites.

Table 1.26: Marketing activities on social networking sites

V1	Promotional activities (advertisements etc.) through social networking site(s) are an intrusion on my privacy
V2	It is frustrating that too many advertisements/ information about various brands come up frequently on social networking sites
V3	I feel comfortable in receiving advertisements/information on a

	product(s)related to my interest areas
V4	I notice advertisements if they state benefits that I am likely to receive
V5	In this busy lifestyle, the information received through social networking site(s)would help keep me updated
V6	The advertisements through joining a product community page can help me in choosing a product
V7	Advertisements through social networking site(s)are an effective way of communication of information to the potential customers
V8	More number of ‘likes’ for a particular product/brand can affect my purchase-decision
V9	Advertisements/information on social networking site(s)can in fluence your purchase decision
V10	Information available on social networking site(s)area good way of getting information, even if the product is not intended to be purchased
V11	Pictures of products displayed on social networking site(s)can influence my purchase decision
V12	Social networking site(s)area good way for the marketers to maintain a healthy Relationship and continuous touch with the existing and potential customers
V13	Product/brand information provided on social networking site(s)is reliable
V14	Many countries have banned social networking site(s)is a correct decision
V15	Social networking site(s)have been banned in many offices in India. I think it is a great challenge for marketers to connect to their customers, especially when internet-access is relatively less in India
V16	Social networking site(s)could be a good platform for making comparisons between various competitive brands
V17	Social networking site(s)can be used to recommend information on various products and brands, to the friends/counter-members
V18	Distribution of free samples /contests by asking customers to like a page and win prizes,etc. ,on social networking site(s)is an effective way of promotion
V19	Short age of electricity supply is a problem
V20	Internet accessibility is not a problem
V21	Facility of placing orders and making payments should be available on social networking sites
V22	Online payments are safe and secure
V23	It is unethical to post advertisements on social networking sites

Source: Primary Data

Demo graphic variables and Product Category:

The table 1.27, table 1.28 and table 1.29 and table 1.40 depict the frequency and percentage values of different demographic variables i.e., gender, age and occupation with respect to the product categories whose information they look for on social networking sites.

Table 1.27: Gender and product categories

	Males		Females	
	N=92		N=64	
Product Categories	Frequency	Percent	Frequency	Percent
Home Décor	6	6.5	6	9.4
Electronic Items	34	37.0	22	34.4
Home Appliances	17	18.5	14	21.9
Apparels	3	3.3	5	7.8
Fashion Products	3	3.3	6	9.4
Reading Material	14	15.2	4	6.3
Financial Products	6	6.5	2	3.1
Educational Institutions	15	16.3	8	12.5
Hospitals	8	8.7	5	7.8
Other FMCGs	9	9.8	7	10.9
Others	16	17.4	6	9.4

Source: Primary data

1.27 Gender and Product Categories:

The table 1.27 depicts the individual scores and percentage values of the two genders with respect to the product categories that people look for on social networking sites.

It can be interpreted that out of the 156 respondents who look for information pertaining to certain product categories, both the males and females look for information about the ‘mobile phones’ most. 50percent of the males look for ‘mobile phones’ and 36 percent of the females look for information pertaining to ‘mobile phones’.

It can be interpreted from this table that male and female respondents are more inclined towards product categories like ‘mobile phones’, ‘electronic items’, ‘home appliances’ and ‘reading material’ and the responses across gender groups are almost uniform.

Table 1.28: Age and product categories

	16-24Years		25-32Years		33-40Years		41-48Years	
	N=78		N=56		N=20		N=2	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Home Décor	7	9.0	3	5.4	2	10.0	0	0.0
Electronic Items	27	34.6	19	33.9	9	45.0	1	50.0
Home Appliances	22	28.2	5	8.9	4	20.0	0	0.0
Apparels	3	3.8	4	7.1	1	5.0	0	0.0
Mobile Phones	66	84.6	49	87.5	18	90.0	2	100.0
Fashion Products	4	5.1	5	8.9	2	10.0	0	0.0
Reading Material	11	14.1	5	8.9	1	5.0	0	0.0
Fin. Products	5	6.4	2	3.6	1	5.0	0	0.0
Edu. Institutions	21	26.9	1	1.8	4	20.0	0	0.0
Hospitals	3	3.8	5	8.9	1	5.0	1	50.0
Other FMCGs	6	7.7	8	14.3	1	5.0	1	50.0
Others	6	7.7	4	7.1	0	0.0	1	50.0

Source: Primary data

1.28 Age and Product Categories:

The table presents the individual scores and percentage values of the different age groups-16-24years; 25-32 years; 33-40 years and 41-48 years with respect to the product categories that they look for on social networking sites. It can be interpreted that out of the 156 respondents who look for information pertaining to certain product categories, the people within the age group of 16-24years look most for the ‘mobile phones’ (42 percent), followed by the age group 25-32 years (31percent). The information pertaining to the ‘educational institutes’ is also seek most by the category of 16-24 years (13 percent). The information relating to the ‘home appliances’ is also looked upon by the age group of 16-24 years (17 percent), followed by the age group 25-32 years(12percent).

Table 1.29: Educational qualifications and product categories

	Matriculation		Intermediate		Graduation		Postgraduation	
	N=20		N=23		N=53		N=60	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Home Décor	1	5.0	1	4.3	7	13.2	4	6.7
Electronic Items	4	20.0	12	52.2	19	35.8	22	36.7
Home Appliances	6	30.0	4	17.4	14	26.4	8	13.3
Apparels	1	5.0	0	0.0	4	7.5	4	6.7
Mobile Phones	17	85.0	19	82.6	50	94.3	50	83.3
Fashion Products	1	5.0	1	4.3	4	7.5	4	6.7
Reading Material	5	25.0	2	8.7	6	11.3	6	10.0
Financial Products	2	10.0	2	8.7	3	5.6	2	3.3

	Matriculation		Intermediate		Graduation		Postgraduation	
	N=20		N=23		N=53		N=60	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Edu. Institutions	6	30.0	5	21.7	7	13.2	6	10.0
Hospitals	1	5.0	4	17.4	4	7.5	5	8.3
Other FMCGs	2	10.0	4	17.4	5	9.4	6	10.0
Others	2	10.0	2	8.7	5	9.4	4	6.7

Source: Primary data

1.29 Educational Qualifications and Product Categories:

A look at the table 1.29 indicates that majority of the respondents from all educational qualifications categories look most for the information related to ‘mobile phones. Graduates have the highest percentage (94.3 percent) who look for ‘mobile phones. The information related to ‘reading material’ and ‘educational institutes’ are mostly sought by the matriculates.

	Unemployed		Students		Entrepreneurs		Professional	
	N=20		N=43		N=8		N=85	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Home Décor	1	5.0	5	11.6	0	0.0	7	8.2
Electronic Items	6	30.0	18	41.9	4	50.0	29	34.1
Home Appliances	6	30.0	13	30.2	1	12.5	12	14.1
Apparels	1	5.0	1	2.3	0	0.0	7	8.2
Mobile Phones	17	85.0	36	83.7	7	87.5	76	89.4
Fashion Products	1	5.0	3	7.0	0	0.0	6	7.1
Reading Material	4	20.0	6	14.0	0	0.0	9	10.6
Financial Products	1	5.0	4	9.3	1	12.5	3	3.5
Edu. Institutions	3	15.0	18	41.9	1	12.5	2	2.4
Hospitals	2	10.0	1	2.3	2	25.0	9	10.6
Other FMCGs	2	10.0	2	4.7	2	25.0	11	12.9
Others	2	10.0	3	7.0	1	12.5	7	8.2

Source: Primary data

1.30 Occupation and Product Categories:

The table reveals the individual scores and percentage values of the different occupational groups- professionals, entrepreneurs, students and unemployed, with respect to the product categories that people look for on social networking sites. It can be interpreted that out of the 156 respondents who look for information pertaining to certain product categories, the people indifferent professions look for information on different product categories. It is clear that the ‘working professionals’ look most for the ‘mobile phones’ on social networking sites (48 percent), followed by the ‘students’ with 23 percent respondents.

For the information pertaining to the ‘educational Institutions’, it is the ‘students’ who look most for the same on social networking sites (11 percent). ‘Professionals’ also look maximum for the ‘home appliances’ (18 percent). ‘Professionals’ also look most for ‘other FMCGs’ on social networking sites (7 percent). ‘Entrepreneurs’ and ‘unemployed’ least look for the product information on social networking sites.

The analysis of data shows that social networking sites are the emerging as a marketing tool. People are gradually moving towards these sites for the procurement of information related to products and brands. It seems that social networking sites cannot replace the traditional media but if integrated with the traditional media, under the communication-mix of an organization, it may prove highly beneficial to the marketers. There are certain aspects that have to be kept in mind by the marketers which are notice able to the customers present on such sites.

Overall Conclusion:

The overall conclusion of the study are based on literature studied and analysis of data. The chapter-V presented question-wise/statement-wise analysis. This section enshrines an overview of the entire research work undertaken by the researcher.

Table 1.41 presents a summary of results pertaining to analysis of all the 23 statements, data on which was obtained on five-point Likert scale, has been presented. The means on each statement signifies level of agreement of respondents in respect of each individual statement; higher theme an, higher is the level of agreement. Coefficient of variation has also been used to see how much variation is found among respondents; higher the value of coefficient of variation, higher is the variation in responses. For the sake of effectiveness of presentation of results, the researcher has identified five statements with highest and lowest means and five statements with highest and lowest coefficient of variation.

It is amply clear from the table 1.41 that the statements V14, V15, V19, V17 and V21 have the highest mean score i.e., for these statements the level of agreement is highest. It is heartening to see that coefficient of variation for all these five statements is lowest which indicates that the responses of one dispersed.

Table 1.41: Coefficient of Variation

Variables	Mean	SD	CV
V1	2.34	1.34	0.57
V2	2.76	1.46	0.53
V3	2.42	1.59	0.66
V4	2.52	1.64	0.65
V5	3.03	1.56	0.51
V6	3.24	1.38	0.43
V7	3.58	1.65	0.46
V8	2.59	1.36	0.52

Variables	Mean	SD	CV
V9	2.02	1.24	0.61
V10	3.48	1.57	0.45
V11	2.63	1.36	0.52
V12	3.40	1.57	0.46
V13	3.51	1.57	0.45
V14	4.19	1.09	0.26
V15	3.96	1.33	0.34
V16	2.50	1.37	0.55
V17	3.81	1.41	0.37
V18	3.24	1.54	0.48
V19	3.85	1.36	0.35
V20	2.60	1.53	0.59
V21	3.69	1.32	0.36
V22	3.50	1.56	0.45
V23	2.47	1.55	0.63

Source: Primary data

Lowest mean scores are found in case of statements V1, V3, V4, V9 and V23 i.e. the respondents have least degree of agreement with these statements. It is worth mentioning here that out of these five statements, V3, V4, V9 and V23 have highest value of coefficient of variance i.e., the responses exhibit a great variation.

The conclusion that can be drawn from this table is that in respect of statements with highest mean and lowest coefficient of variation, the opinions of respondents express a stronger level of agreement as well as uniformity. The marketers must keep it in mind that customers as a whole feel strongly about these variables.

Another statement that has been strongly agreed by the respondents is that “shortage of electricity is a problem”. We all know that India is electricity-deficient and in many are as electricity makes a sporadic presence. This is a challenge indeed for marketers that has to be dealt with strategically. Laptops and smart-phone marketers will also realize that because of shortage of electricity problem, they will have to provide longer battery life to their customers so that they can have uninterrupted access to the internet and social networking sites for longer periods of time. This analysis hints that commercial interests of social networking sites, smart-phones and laptop manufacturers and marketers of products and services who want to be strategically present on social networking site sent wined.

The respondents strongly and uniformly agree that “social networking sites can be used to recommend brand information to the counter member” is a welcome news for social networking sites as this suggests that if marketers want their brands to be ‘talked about’ and ‘recommended ’to others, they will have to register a strong presence on social networking

sites. This shows the viral impact of social networking sites. Their marketing messages must be so catchy that the people pay attention to them and recommend others to see the same. It can be safely argued that if more and more marketers join social networking sites for promotion of their brands on social networking sites, it simply means more advertising revenue for social networking sites.

The facility of placing orders and making payment should be available on social networking sites' has also garnered patronage of respondents and the researcher feels that such a response must sound music to the ears of marketers of products and services as well as social networking sites. It shows that today's net-savvy and social networking sites members want not just want 'content' on different brands, but also want to enjoy the convenience of ordering and paying for the same then and there. This phenomenon may lead to lots of impulse purchases. The social networking sites must start mulling over how these facilities can be provided to their users.

The following statements have elicited lowest level of agreement that is reflected in their low mean score as well as high level of dispersion. This can be interpreted that on an average, the level of agreement of respondents regarding these statements is low, but at the same time high coefficient of variation reflects that consumers opinions are scattered.

It is interesting to note that all these five statements pertain to promotional activities of marketers of social networking sites. The respondents have eloquently indicated that they do not want marketing promotions and they just to enjoy themselves on social networking sites. This implies that marketers must reach their target audience surreptitiously, which entail that guerilla.

Marketing communication has to be resorted to. The respondents do not want to receive advertisements, do not feel that advertisements influence their decisions, they treat promotional messages as intrusion on their privacy etc. all these criticisms are not new, and in spite of and despite of them the marketers keep bombarding the customers with advertising and the effective advertisements are noticed by and acted upon by the customers.

The real challenge lies in making the advertisements worth-noticing and trustworthy, useful to the consumers and probably without letting them know that they are advertised to. The marketers may initiate brand conversation indirectly and let the users of social networking sites jump on the bandwagon of such conversations and thereby generating huge content. It is probably going to be an interface of guerilla marketing and viral marketing, if the marketers have to gain mile age out of their presence on social networking sites.

An almost similar trend is visible when age-wise results are perused as in only one out of 23 cases, null hypothesis has been rejected. The null hypothesis has been rejected in respect of V14, the statement that 'Many countries have banned social networking sites is a correct decision'. The high mean score reflects that in general the respondents have reported a strong level of agreement, but variations occur across different age-groups. The respondents from 41-48 years age-group who can be deemed as middle aged and mature people have indicated that they feel that banning social networking sites is not as much a correct decision as is felt by their other counterparts.

The mean scores for age-groups indicate that there is an inversely proportional relationship between age and opinion on banning social networking sites as correct decision. In the hindsight, the researcher feels that it does not stand to common sense, and the statement might have been mis understood. The opinion of respondents across different age-groups is visibly quite uniform across different age-groups as only one out of 23 null hypo thesis in this context stands rejected.

6.02 Suggestions:

On the basis of findings of the Study, the research attempts to give the following suggestions to the marketers, for the use of social networking sites as the element of marketing strategy:

The first and the foremost recommendation is that the social networking sites should not be assumed as a medium to replace the traditional media channels. Rather it must be an integral part of the 'marketing communication-mix', which when integrated with the traditional media, could bring fruitful results in achieving the marketing objectives.

In the era of internet revolution, when increasing number people are becoming the members of different social networking sites, the marketers must take the advantage of this golden opportunity. The brands must have a strong and active presence on different social networking sites.

The marketer needs to research various social networking sites available and after reviewing the features of all, the appropriate site(s) must be selected. The action plan has to be developed according to the explored relative features of the available social networking sites. The marketer should choose the social networking site(s) that would enable them to achieve the desired results. The plan should be developed as per the factors like objectives, target audience, nature of the product, etc.

The marketers must remember that the social networking sites are not a straight gateway to increase their respective 'sales'. The marketers must remember that the people are present on social networking sites for the sake of entertainment, networking, etc. So, the marketers should implement the innovative strategies that could enhance the 'customers' engagement'. The elements like contests, general knowledge tests, games, puzzles, etc. could be of great help in getting the customers' engaged in an active manner.

One of the most significant opportunities available before the marketers is the availability of the personal information of the target customers on different social networking sites. As indicated in the findings of the study also, the customers include a variety of their personal information on such sites, which could be of great utility to the marketers. Therefore, the marketers should take the best use of the customer-specific and area-specific information. If feasible, the marketers may customize their respective 'marketing-mix' as per the customer-specific and area-specific information available on such sites. The marketers may identify and fulfill the one-to-one micro needs of the target customers accordingly. The marketers must be actively involved in generating certain events or information that could induce positive electronic word of mouth among the target audience present on social networking sites.

In case of some negative electronic word of mouth or expression of dissatisfaction from the marketers' product(s) occur on some social networking sites, the marketers should indulge into quick and positive interaction with the customer(s) and resolve the issue by accepting the faults and taking corrective actions. The feedback from the customers should be readily accepted and there should be quick response to the same otherwise the electronic word of mouth may be harmful to the marketers.

The marketers must adopt the advertising patterns which are most likely to be noticed by the target customers on social networking sites. For instance, advertisements that appear at

login/logout is the most noticeable one, as suggested in findings of the study also. The indirect engagement through 'contests', 'tips sharing', 'quiz', etc.. May be helpful to the marketers.

Another aspect to be understood by the marketers is to post the contents so as to make the same personal for the target audience. The posted information must be of 'interest' to the users. The content should include information, text, pictures, videos, graphics, etc., that would best appeal the audience and that help in attaining the maximum reach to the audience. The content should match the interests of the target audience and should be attractive, appealing and thoughtful, that would be capable enough to motivate the users to look at it and use it to procure the requisite information, and also inspire others to forward and share the contents to their peers too, ultimately realizing the objective of increasing brand retention in the minds of the targets. The posted contents should be interesting and engaging.

The marketers may appoint in-house social media managers or outsource the task of observing and tracing the most popular social networking sites, keeping in mind the nature of Products offered under the umbrella of the marketers and the attributes of the target segments i.e., their demo graphics like gender, age, income, occupation, interest are as, etc.

3. A Study of Online Buying Behaviour of Women in India

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Abstract:

A key component of modern business strategies is the use of digital marketing. The shift from traditional to digital marketing has been significant over the past decade, with online platforms becoming the primary source of information for consumers. As the world has become more interconnected through globalization, various sectors, including marketing, have undergone substantial transformations to adapt to the changing landscape. The growing number of internet users in countries like India has contributed to the growth of digital marketing, which offers vast opportunities for online shopping and e-commerce. It's critical for businesses to comprehend how customers engage with online platforms.

This information can help marketers develop successful marketing strategies. In addition to transforming how consumers make purchases, the internet has enabled companies to reduce marketing costs and streamline their operations, resulting in a potential reduction in prices for products and services to remain competitive. Nowadays, companies use the internet to communicate with their customers, gather feedback, conduct customer satisfaction surveys, and promote their products and services.

Online shopping isn't the only way consumers compare prices, product features, and after-sale service offerings in this digital age. "Webrooming" is the process of researching products online before purchasing them in-store, while "showrooming" is the process of browsing products in-store before buying them online). Understanding these consumer behaviors is essential for businesses to provide the right incentives and create seamless omnichannel experiences for their customers. Industry professionals see a bright future for online business and e-commerce. Companies must keep up with digital advancements and understand consumer preferences to stay ahead of the game. To succeed in online business and e-commerce, companies must stay current with digital trends and understand consumer preferences.

Keywords:

digital marketing, publicity, importance, customer reach, marketing cost,

Introduction:

Consumer behavior:

Consumer behavior is the study of how individual customers, groups or organizations select, buy, use, and dispose ideas, goods, and services to satisfy their needs and wants. It refers to the actions of the consumers in Consumer behavior refers to the study of individuals or groups and the processes they use to select, purchase, use, and dispose of products, services, ideas, or experiences to satisfy their needs and desires (Solomon, 2021). It is a multidisciplinary field that combines insights from psychology, sociology, economics, and marketing to understand how consumers make decisions.

Consumer behavior is influenced by a variety of factors, including personal characteristics (e.g., personality, values, lifestyle), psychological processes (e.g., perception, motivation, learning), social influences (e.g., family, culture, reference groups), and situational factors (e.g., time constraints, financial considerations) (Kotler & Keller, 2021).

One prominent theory used to explain consumer behavior is the Theory of Planned Behavior (TPB) proposed by Ajzen (1991). The TPB suggests that behavioral intentions are influenced by three key factors: attitude toward the behavior, subjective norms (social influences), and perceived behavioral control. These factors collectively shape an individual's intention to engage in a particular behavior, such as purchasing a product or service.

Furthermore, research has shown that consumers often go through a decision-making process when making purchases. The consumer decision-making process typically involves five stages: problem recognition, information search, evaluation of alternatives, purchase decision, and post-purchase evaluation (Blackwell et al., 2020).

During these stages, consumers may engage in extensive information search, evaluate various brands, and consider factors like price, quality, and social influences before making a final purchase decision. In recent years, advancements in technology and the rise of e-commerce have significantly impacted consumer behavior. The ease of online shopping, the availability of product reviews, and the influence of social media have transformed how consumers research, evaluate, and make purchase decisions (Li & Zhang, 2021).

Understanding consumer behavior is essential for marketers and businesses to develop effective marketing strategies, create products that meet consumers' needs, and build strong relationships with their target audience. By analyzing consumer behavior, businesses can gain insights into customer preferences, motivations, and decision-making processes, which can ultimately lead to increased customer satisfaction and loyalty (Lamb et)

Online Buying Behavior:

Online buying behavior of women is influenced by various factors that combine to shape their preferences, motivations, and decision-making processes when purchasing products or services online. Some key factors that impact women's online buying behavior include:

1. **Convenience:** Online shopping offers women the convenience of browsing and buying products from the comfort of their homes or on-the-go using mobile devices. The ability to shop 24/7 and avoid physical store visits saves time and effort, making it an attractive option for many women.
2. **Product Variety:** E-commerce platforms provide a vast range of products, often more than what is available in physical stores. Women appreciate the diverse product choices, enabling them to find specific styles, sizes, and colors that suit their preferences.
3. **Price and Discounts:** Competitive pricing and frequent discounts offered by online retailers attract women shoppers. They tend to compare prices across different websites to find the best deals and discounts on their desired products.
4. **Product Information and Reviews:** Women value detailed product descriptions, images, and customer reviews provided by online retailers. This information helps them make informed decisions and gain confidence in the product's quality and suitability.
5. **Trust and Security:** Building trust is crucial for women when making online purchases. They prefer to buy from reputable and well-known brands or websites with secure payment options to ensure the safety of their personal and financial information.
6. **Social Influence:** Recommendations from friends, family, and online communities can play a significant role in shaping women's buying decisions. Positive reviews and word-of-mouth referrals can enhance their trust in a product or brand.
7. **Return and Exchange Policies:** Women appreciate flexible return and exchange policies, as it provides reassurance that they can return or exchange products if they are not satisfied or if the product does not meet their expectations.
8. **Mobile Shopping:** With the increasing use of smartphones, mobile shopping has become popular among women. Mobile apps and mobile-friendly websites offer convenience and ease of use, contributing to their online buying behavior.
9. **Brand Loyalty:** Women may exhibit brand loyalty and prefer to repurchase from brands they trust and have had positive experiences with in the past.
10. **Influencer Marketing:** Influencers and social media personalities can significantly influence women's buying decisions. Authentic recommendations and product reviews from influencers can sway their choices.

It is important to note that women's online buying behavior is not uniform, and individual preferences, cultural influences, and lifestyle choices also play significant roles in shaping their shopping decisions.

As the digital landscape continues to evolve, businesses need to understand these factors and tailor their marketing strategies to effectively target and engage women online shoppers. By addressing their specific needs and concerns, businesses can build strong relationships with female customers and enhance their overall online shopping experience.

Behavior is the apparent, noticeable response in a given situation with respect to a given target. Use of the Internet for retail shopping has expanded immensely in recent years and has had a profound influence on the shopping process for many consumers. Online buying behavior is a type of behavior which is exhibited by customers while browsing websites of an e-tailer in order to search, select and purchase goods and services, in order to fulfill their needs and wants. It's basically a behavior which is reflected by the purchaser during the process of buying through the internet. Nowadays, the Internet is being widely used for various purposes and has become part of daily life.

At its inception internet was used as a medium for communication only but with time it has become a source to learn, entertain and most recently a medium for the exchange of goods and services between buyer and seller.

The internet now has resulted in a new mode of exchange between buyer and sellers and has created an alternative for the traditional marketplace. Shopping through the internet has brought a different dimension to commercial activities. Compared to traditional shopping, consumers are preferring the internet as shopping medium

Review of Literature

The creation of social networking sites like Myspace in 2003 and Facebook in 2004 led to the popularity of the term 'social media'. The term 'Web 2.0' was also first used around this time to describe the new use of the internet as a platform where content is no longer created and published by individuals but is continuously modified by many users in a participatory and collaborative manner (Kaplan and Haenlein, 2010).

In India internet population has almost reached the general population. The number of first-time users is bound to increase so the website design should be user friendly. New users rapidly acclimatize to the new medium of consumption.

Bad experiences like getting more spam increases dropout rate. Significant incentives would lure them back. Longitudinal data usage helped to observe changes in time over two periods thus leading to future predictions. Over 12-month period number of products bought online increased and each customer started spending more on each purchase. Online retail market would increase not only by the existing customers but the new customers as well. So satisfaction and retention of the old customers is important as they are the existing market and have the power to influence new market through word of mouth.

Stephen& Grant, 2005- Consumer Behaviour and Consumer Socialisation Consumer behaviour is a complex area, but marketers do need to try to find out as much as they can about who their customers are in order to identify their needs, how they behave, what influences them to make a decision to buy and what processes they follow when selecting a product/service/channel. This information is required so that marketers can target their marketing activities as precisely and cost effectively as possible.

There are many influences on purchasing behaviour, including social (culture, sub-culture, social class, reference groups, and family), technological, political, economic and personal factors (motivation, personality, self-image, perception, learning, beliefs and attitude

(Bhattacharjee, 2001) Consumers continue to buy using business-to- consumer e-commerce services, if they are satisfied with the initial service use, their perceived usefulness of service use, and the interaction between perceived usefulness and loyalty incentives for service use Satisfaction though is an important influencer; it comes at a cost so customer profitability analysis should be done before offering satisfaction incentives. Loyalty incentive programs are effective retention strategies only when the consumers find them to be a useful service.³

It was found that personal innovativeness and perceived usefulness have equal impact on attitudes and online purchase intentions of both the genders. But personal awareness of security affects attitude and purchase intentions of male not female. Attitude and online purchase intentions of Female are strongly influenced than male by the perceived ease of purchasing (**Chiu, Lin, & Tang, 2005**). Increase in the antecedents namely, personal awareness of security, personal innovativeness, perceived ease of purchasing, and perceived usefulness increases the positive attitude and online purchase intentions.

A study conducted in National Capital Region on youth found that convenience, accessibility, scope, attraction, reliability, experience and clarity are the antecedents of online buying (Rishi, 2008). Determinants of online purchase are almost similar in Indian and International context. Convenience came out to be the most important factor. A study tried to find the satisfiers and dissatisfies in the online market.⁵

The study reported that timeliness of delivery and order accuracy were the most important factor which led to dissatisfaction. (Holloway & Beatty, 2008) Where there is a significant relationship between willingness to buy from online stores and convenience, web store environment, customer service and online shopping. enjoyment there is no significant relationship with trust. The loyalty towards online stores also is significantly affected by convenience, web store environment and online shopping enjoyment (**Aryasri & Prasad, 2009**).

Female students had less positive attitude towards online shopping than the male students. Intention to purchase was mostly affected by utilitarian shopping value for online shopping. Hedonic values reflect the excitement, power and fun experienced while making any online purchase (**Khare & Rakesh, 2011**).⁷

E-service quality was found to be a one-dimensional construct. Through regression analysis it was found that ease of use was the most important attribute followed by flexibility and reliability. Consumers value those attributes which simplify the usage of online shopping. E-loyalty with the service provider is indirectly enhanced and perceived value is directly strengthened by good e-service quality perceived by the customer. Results reveal that online service loyalty is a result of consumer's perceived value and satisfaction evaluation. E-service quality did not significantly affect e-satisfaction. Repurchase intentions and positive word of mouth have significant effect on the value perception of the consumer (**Gera, 2011**).

Sharma (2011) found different challenges faced by the online marketers. People still have less confidence on the internet and online shopping. They are also worried about the delivery of goods in proper condition, pricing and bargaining power over the internet, the feel and touch aspect of buying and online fraud and future of online marketing. Wrong timing may decrease customer's interest. Messages should be designed differently for mass market and people who need individual attention (Sharma, 2011).⁹

The variables like anxiety ease of use, usefulness, and price proved to be the most important determinants of online shopping behaviour. Anxiety came out to be the most important factor even though the respondents were the young lot from Pune who have purchased

online at least once. Anxiety included product guarantee, easy product return policy, examine the product before purchase, service reliability and interaction among others. Price is not very important factor. Thus, it could be said that convenience and utility are more important than **price (Panda & Swar, 2013)**.

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Level of online trust, prior online purchase experience and impulse purchase orientation have significant and positive effect on customer online purchase intention. If people trust the process of online purchase, they are bound to buy more. People who have already bought from online sources and had a warm experience would again come back to the same medium. Those customers who have impulse buying orientation would make purchases online more often. Male tend to shop online more than female (**Thamizhvanan & Xavier, 2013**).¹¹

Performance expectancy, effort expectancy of use, social influence and facilitating conditions has significant and positive effect on the individual's intention to use mobile payment services. Positive intention to use this service would lead to actual usage of mobile payments (**Thakur, 2013**).¹²

Satisfied customers would lead to more usage of the online services and products. So the antecedents which affect the satisfaction level of the customers should be studied to enhance the market. Singh and Kaur (2013) found out through multiple regression analysis that ease of use, security and low transaction cost positively and significantly affects the customer satisfaction for e-banking services (Singh & Kaur, 2013). Ease of use turned out to be the most important determinant of **satisfaction (Singh & Kaur, 2013)**.¹³

Internet consumer trust, privacy concerns, security concerns, information search and perceived risk are the most important drivers of purchasing decisions. Traditional sellers have limited number of goods in the store where as online a vast variety of products could be showcased. Convenience could be provided by traditional stores by easy parking methods, good service in the store, showcasing the products so that it could be easily located. But still in online purchase one does not need to think about the time and place so convenience is far better (Mittal, 2013).¹⁴

(Wu, 2013) Over 65% of online shoppers have product/service failure experience in online shopping. Customer satisfaction is determined by distributive justice, interactional justice, expectation confirmation, perceived usefulness, trust belief which in turn explains the intention to complain. Prior shopping experience does not significantly moderates the relation between customer satisfaction and complaint intention but perceived responsiveness is a significant moderator.

Consumer inertia affects repeat-purchase intention more than satisfaction (Kuo, Hu, & Yang, 2013) but both have positive and significant effect on repeat- purchase intention of female users. Consumer inertia minimizes the effort put while making a repeat purchase and consumers are familiar to the store. As good relationship is established with the firm customers compare word of mouth with their experience before making the purchase decision.

G. J. Browne et al., 2004- Research shows that many consumers have yet to adopt the attitude and personal habits necessary for on-line shopping, and many more who have at least embraced the internet for acquiring information still do not use it as a means for purchasing products and services. However, despite these limitations to on-line shopping, all available evidence suggests that purchases on the internet will increase dramatically in the next few years. As the technological infrastructure improves, consumers will become more comfortable shopping on-line, and vendors will learn how to take advantage of the internet's strengths to market and sell goods and services more effectively.

Relationship is established with the firm customers compare word of mouth with their experience before making the purchase decision.

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to brand performance: The role of brand loyalty. *Journal of Marketing*, 65(2), 81-93. This study highlights the importance of brand trust and brand loyalty in women's online buying behavior. It suggests that women tend to rely on trusted brands when making online purchases, and brand loyalty plays a crucial role in influencing their purchase decisions.

Dholakia, U. M., Bagozzi, R. P., & Pearo, L. K. (2004). A social influence model of consumer participation in network- and small-group-based virtual communities. *International Journal of Research in Marketing*, 21(3), 241-263. This research examines how women's online buying behavior is influenced by virtual communities and social networks. It suggests that women actively participate in online communities, seek advice, and share experiences, which influences their purchase decisions.

Jain, S. (2016). A study of online shopping behavior of consumers in India. *International Journal of Scientific and Research Publications*, 6(3), 2250-3153. This study investigates the online shopping behavior of Indian consumers, including women, and identifies factors such as convenience, product variety, and discounts that impact their buying decisions. It sheds light on the increasing trend of women embracing online shopping in India.

Joshi, M., & Rahman, Z. (2015). Determinants of online buying behavior in women customers: A review. *Procedia - Social and Behavioral Sciences*, 189, 380-388. This review article examines various determinants that influence women's online buying behavior, including product quality, website usability, security, and trust. It provides valuable insights into the factors that marketers should consider to attract and retain female online shoppers.

Kaur, H., & Singh, K. (2021). Exploring online buying behavior of women in India: A qualitative study.

International Journal of Consumer Studies, 45(2), 203-211. This qualitative study delves into the motivations and preferences of women in India when buying products online. It explores factors like convenience, price, product information, and trust, providing a nuanced understanding of the online buying behavior of Indian women.

Sinha, P., & Banerjee, A. (2018). Impact of social media on online buying behavior of Indian women. *Journal of Internet Banking and Commerce*, 23(3), 1-14. This research investigates the influence of social media on the online buying behavior of Indian women. It reveals how women's purchase decisions are shaped by social media platforms, online reviews, and recommendations from peers making the purchase decision.

Hypothesis Testing:

In entrepreneurial science, a hypothesis is used to formulate provisional ideas within a business setting. The formulated hypothesis is then evaluated where either the hypothesis is proven to be "true" or "false" through verifiability. Any useful hypothesis will enable predictions by reasoning. It might predict the outcome of an experiment in a laboratory setting or the observation of a phenomenon in nature.

The prediction may also invoke statistics and only talk about probabilities. In framing a hypothesis, the investigator must not currently know the outcome of a test or that it remains reasonably under continuing investigation. Only in such cases does the experiment, test or study potentially increase the probability of showing the truth of a hypothesis.

If the researcher already knows the outcome, it counts as a "consequence" and the researcher should have already considered this while formulating the hypothesis. If one cannot assess the predictions by observation or by experience, the hypothesis needs to be tested by others providing observations.

For example, a new technology or theory might make the necessary experiments feasible. When a possible correlation or similar relation between phenomena is investigated, such as whether a proposed remedy is effective in treating a disease, the hypothesis that a relation

exists cannot be examined the same way one might examine a proposed new law of nature. In such an investigation, if the tested remedy shows no effect in a few cases, these do not necessarily falsify the hypothesis. Instead, statistical tests are used to determine how likely it is that the overall effect would be observed if the hypothesized relation does not exist.

In statistical hypothesis testing, two hypotheses are compared. These are called the null hypothesis and the alternative hypothesis. The null hypothesis is the hypothesis that states that there is no relation between the phenomena whose relation is under investigation, or at least not of the form given by the alternative hypothesis. The alternative hypothesis, as the name suggests, is the alternative to the null hypothesis: it states that there is some kind of relation. The alternative hypothesis may take several forms, depending on the nature of the hypothesized relation. The study aims at the following hypotheses:

1. The women buy the products online.
2. Most of the women feel secure while transacting through online.

To prove the first hypothesis, some data from Ministry of Commerce and Industry shows the preference to buy online. In brief these are as follows-

E-commerce in recent times has been growing rapidly across the world. It is a type of business model, or segment of a larger business model, that enables a firm or individual to conduct business over an electronic network, typically the internet. Electronic commerce operates in all four of the major market segments: business to business, business to consumer, consumer to consumer and consumer to business.

Indian Information Technology Act and E-Commerce:

Indian Information Technology (IT) Act gives legal recognition to electronics records and electronic signature. These are the foremost steps to facilitate paper less trading. Under this Act Ministry of Electronics & Information Technology also has Information Technology Rule, 2000 for Reasonable security practices and procedures and sensitive personal data or information. Under section 72A of IT Amendment Act, 2008, punishment for disclosure of information in breach of a lawful contract is laid down.

FDI Guidelines for E-Commerce by DIPP: DIPP has issued guidelines for FDI in e-commerce. In India 100% FDI is permitted in B2B e-commerce however No FDI is permitted in B2C e-commerce earlier. As per these new guidelines on FDI in e-commerce, 100% FDI under automatic route is permitted in marketplace model of e-commerce, while FDI is not permitted in inventory-based model of e-commerce.

Ministry of Electronics & Information Technology is spearheading such negotiations on e-commerce from Indian side.

Indian E-Commerce Sector

We find Indian e-commerce has come of age and is in growth stage leading to euphoria in marketers worldwide. Angel investors are investing all over the Indian market.

Growth of E-Tailing and E-Commerce in India

- “Online retail sector has grown-up by 57 % since December 2014; electronics products and fashion set close to 49% out of overall pay out in e-tail. Horizontal marketplaces are the obvious winner.
- In 2015, \$9 billion used in Indian start-ups such as Flipkart, Snapdeal, Shop Clues and Paytm,
- getting in a fourth of the amount. However, fashion is where vertical players excel: Flipkart- owned Myntra, Rocket Internet-backed Jabong, and well-funded players like Wooplr, Voonik, and Lime road are also doing on a massive customer base.”
- These are indicators of the Indian market poised at a critical phase in traditional retail sector. After analyzing the data given by Ministry of Commerce and Industry Government of India , the first hypothesis is hence proved.

To prove the second hypothesis , most of the people feel secure while transacting through online. The data from India Brand Equity Foundation July 2019 Report shows the following details : India's online fashion market is to grow 3.5 percent from \$4 billion to \$14 billion by 2020. The fashion market in India is currently estimated at \$70 billion, of which only 25% is organized retail market.

Myntra today shared key insights on the fabric of fashion in India, based on comprehensive research and acumen of the segment. Senior members from the management, including, CEO, Ananth Narayanan and CMO and Head of Jabong, Gunjan Soni, presented rich industry, market and consumer analysis, at the India Fashion Forum event held in the city of Mumbai.

The fashion and lifestyle industry in India is witnessing a surge, with strong drivers of growth and a host of other factors resulting in its progress. Pegged at \$100 billion and growing at a CAGR of 8-10% offline, the segment gradually seems to be embracing online as the channel of

the future, evident from a projected penetration of 15-20% over the next 5 years, from the current 4%. As per research, India has 450 million internet ever accessed population which is expected to grow by 62% to 729 million by 2020. Of this, 310 million is the active internet accessing population, accessing the internet at least once a month. This number is expected to increase by 35% to 419Mn by 2020.

Total numbers of online transactions were 200 million in 2017 and they are expected to increase by 65% by 2020. Of the online transactions, 60 Million is the base of online fashion shoppers. This is estimated to double by 2020 to about 120 Million. The brand is also witnessing a change in consumer profile, new fashion segments, fast fashion and a market for premium brands, products and accessories.

The changing online consumer profile is evident from a significant shift in numbers, such as 50% of consumers reside in rural areas opposed to the earlier 30%. Women shoppers form a base of 45% as opposed to the earlier 28% and vernacular online content has increased from 45% to almost 60%.²⁷

E-commerce Industry in India



- Phone Pe gets US\$ 28 million funding from parent Flipkart.
- Jio Mart starts home delivery in Navi Mumbai, Thane and Kalyan
- Big basket raises US\$ 50 million debt funding from Alibaba.
- Swiggy raises additional US\$ 43 million in Series I round.
- Nykaa raises Rs 100 crore from Steadview²⁸.

The e-commerce has transformed the way business is done in India. The Indian e-commerce market is expected to grow to US\$ 200 billion by 2026 from US\$

38.5 billion as of 2017. Much growth of the industry has been triggered by increasing internet and smartphone penetration. The ongoing digital transformation in the country is expected to increase India's total internet user base to 829 million by 2021 from 636.73 million in FY19. India's internet economy is expected to double from US\$ 125 billion as of April 2017 to US\$ 250 billion by 2020, majorly backed by ecommerce. India's E-commerce revenue is expected to jump from US\$ 39 billion in 2017 to US\$ 120 billion in 2020, growing at an annual rate of 51 per cent, the highest in the world.

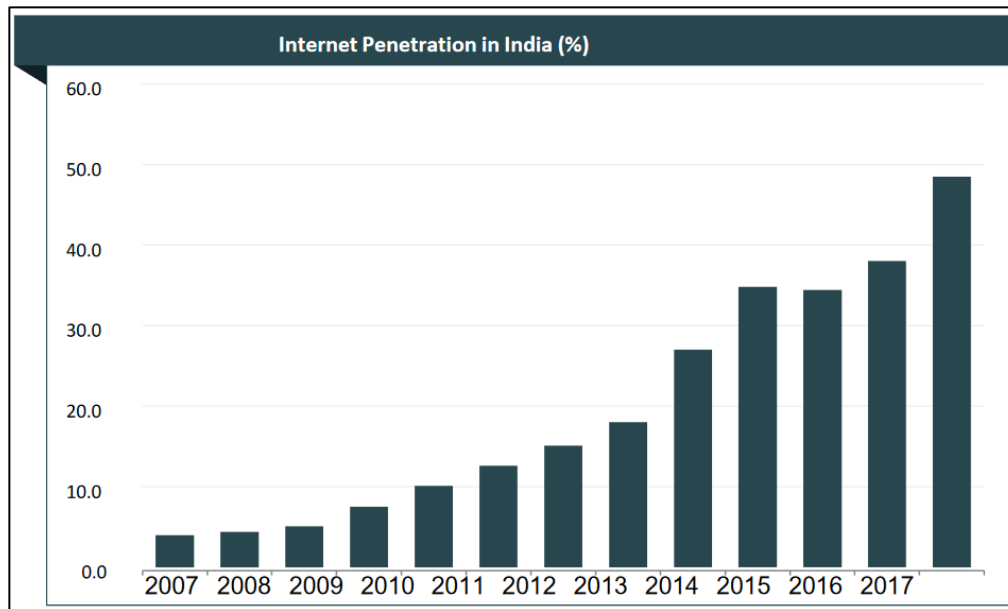
After analyzing all data the second hypothesis is hence proved to be true. Because the payment gateway is safe in trusted websites and they provide Cash on Delivery facility also. That is the reason that India is continuously growing in E- Business on Global level that included share of women in Online Shopping Specially in fashion, jewellery and clothing segmentation.

Results and Discussion:

- India is the fastest growing market for the E-commerce sector with the e-commerce market expected to grow approximately 1,200 per cent by 2026.
- Being driven by a young demographic profile, increasing internet penetration and

relative better economic performance, India's E-commerce revenue is expected to jump from US\$ 39 billion in 2017 to US\$ 120 billion in 2020, growing at an annual rate of 51 per cent, the highest in the world.

- A lot of India's blue-chip PE firms had previously avoided investing in E-commerce but are now looking for opportunities in the sector.
- India's start-up ecosystem is growing supported by favorable FDI policies,
- Government initiatives like Start-up India and Digital India, as well as rising internet penetration driven by market players like Reliance Jio.
- The recent rise in digital literacy has led to an influx of investment in E-commerce firms, levelling the market for new players to set up their base, while churn out innovative patterns to disrupt old functioning.
- E-commerce industry in India witnessed 21 private equity and venture capital deals worth US\$ 2.1 billion in 2017. E-commerce and consumer internet companies in India received more than US\$ 7 billion in private equity and venture capital in 2018.
- In India 100 per cent FDI is permitted in B2B E-commerce,
- As per the new Foreign Direct Investment (FDI) policy, online entities through foreign investments cannot offer the products which are sold by retailers in which they hold equity stake.
- As per new guidelines on FDI in E-commerce, 100 per cent FDI under automatic route is permitted in marketplace model of E-commerce.
- The heavy investment of Government of India in rolling out the fiber network for 5G will help boost ecommerce in India.⁵³
- Propelled by rising smart phone penetration, the launch of 4G networks and increasing consumer wealth, the Indian E-commerce market is expected to grow to US\$ 200 billion by 2027 from US\$ 38.5 billion in 2017.
- E-commerce is increasingly attracting customers from Tier 2 and 3 cities, where people have limited access to brands but have high aspirations.
- Average online retail spending in India was US\$ 224 per user in 2017.
- The Government e-marketplace (GeM), three years after its inauguration saw a cumulative procurement by the central and state governments of Rs 24,183 crore (US\$ billion) in FY19 and has a target of Rs 50,000 (US\$ 7.15 billion) crore in FY20.
- By 2022, smartphone users are expected to reach 476 million and E-commerce sector expected to grow 1,200 per cent by 2026.
- Internet penetration in India grew from just 4 per cent in 2007 to 34.42 per cent in 2017, registering a CAGR of 24 per cent between 2007 and 2017. As of December 2018 overall internet penetration in India was 46.13 per cent.
- Urban India with an estimated population of 444 million as per 2011 census, already had 390.91 million people using the internet as of December 2018.
- Rural India, with an estimated population of 906 million as per 2011 census, has 213.30 million internet users as of December 2018. There is therefore a great opportunity for increasing penetration in the rural areas. Internet penetration in rural India is expected to grow as high as 45 per cent by 2021 compared to the current rate of 21.76 per cent



- **Internet Penetration in India (%)**
- **Note: Internet penetration - number of internet subscribers per 100 population**
- **Source: Economic Times, Live Mint, Department of Telecommunications, Bain & Company – Unlocking Digital for Bharat**
- Rural internet subscriber base stood at 227.01 million and rural India penetration was 25.36 per cent in FY19.
- Urban internet subscriber base stood at 409.72 million and its penetration was 97.94 per cent in FY19.
- Number of active internet users in the country is the second highest globally and data usage of 8 GB/subscriber/month is comparable to developed countries.

Conclusion:

From the market perspective, people of India comprise different segments of consumers, based on class, status, and income. An important and recent development in India's consumerism is the emergence of the rural market and market for eco-friendly products for several consumer goods. Three fourths of India's population lives in rural areas, and contribute one-third of the national income so it should not be avoided. Lastly, creating value along with delivering delight to the customer is what is most important. We live in a digital age and thus need to keep up with new trends in the social media.

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4. Artificial Intelligence and Machine Learning Applications

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Abstract:

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. It encompasses various technologies and approaches, including machine learning, neural networks, natural language processing, and robotics, among others. AI is used in a wide range of applications, from virtual assistants like Siri to self-driving cars and medical diagnosis systems. It continues to advance and has the potential to significantly impact various industries and aspects of our daily lives. Machine learning is a field of artificial intelligence that focuses on developing algorithms and models that can learn from data and make predictions or decisions without being explicitly programmed. It encompasses various techniques, including supervised learning, unsupervised learning, and reinforcement learning, and is widely used in applications such as image recognition, natural language processing, and recommendation systems.

Introduction to Artificial Intelligence and Machine Learning:

Artificial Intelligence (AI) and Machine Learning (ML) are closely related fields, but they have distinct meanings:

Artificial Intelligence (AI): AI refers to the broader concept of creating machines or computer systems that can perform tasks that typically require human intelligence. These tasks include reasoning, problem-solving, learning, understanding natural language, and perceiving their environment. AI encompasses a wide range of techniques, including machine learning, natural language processing, computer vision, and more. AI can be further categorized into Narrow AI (or Weak AI), which is designed for specific tasks, and General AI (or Strong AI), which would possess human-like intelligence across a wide range of tasks.

Machine Learning (ML): ML is a subset of AI that focuses on developing algorithms and models that enable computers to learn from data and make predictions or decisions without being explicitly programmed. ML algorithms use statistical techniques to identify patterns, make sense of data, and improve their performance over time through experience. Supervised learning, unsupervised learning, and reinforcement learning are common categories of ML techniques.

In the ever-evolving landscape of technology, two terms that have garnered significant attention and transformed industries are "Artificial Intelligence" (AI) and "Machine Learning" (ML). These fields represent the forefront of human achievement in the realm of computer science, bringing us closer to creating machines with human-like intelligence.

Understanding Artificial Intelligence (AI):

Artificial Intelligence, often referred to as AI, is a concept that has captured the human imagination for decades. At its core, AI is the endeavor to imbue machines with the ability to think, reason, and perform tasks that traditionally require human intelligence. The ultimate goal of AI is to develop systems that can mimic, and in some cases surpass, human cognitive functions.

The Two Facets of AI:

AI can be broadly categorized into two facets:

Narrow AI (Weak AI): This form of AI is designed for specific tasks or domains. It excels at solving particular problems but lacks general intelligence. Examples of narrow AI include virtual assistants like Siri, chatbots, and recommendation algorithms used by streaming platforms.

General AI (Strong AI): This represents the holy grail of AI. General AI would possess human-like intelligence across a wide range of tasks, akin to the cognitive abilities humans exhibit. Achieving General AI remains an aspiration, and as of the knowledge cutoff in September 2021, it has not been realized.

The Role of Machine Learning (ML):

Machine Learning, a subset of AI, is the driving force behind the advancement of intelligent systems. ML is the methodology through which computers learn and improve their performance from data without being explicitly programmed. In essence, it equips machines with the ability to recognize patterns, make predictions, and continuously refine their understanding through experience.

Categories of Machine Learning-

There are three primary categories of machine learning:

Supervised Learning: In supervised learning, algorithms are trained on labeled datasets, meaning the input data is paired with corresponding output labels. The goal is to learn a mapping from inputs to outputs, making it well-suited for tasks like image recognition, spam detection, and language translation. **Unsupervised Learning:** Unsupervised learning deals with unlabeled data, where the algorithm identifies patterns and structures within the data on its own. Clustering and dimensionality reduction are common applications, such as customer segmentation and data compression.

Reinforcement Learning: In reinforcement learning, an agent learns to make sequences of decisions in an environment to maximize a reward signal. This approach is prevalent in training autonomous systems, such as self-driving cars and game-playing AI.

The AI and ML Revolution:

The impact of AI and ML is visible across various sectors, including healthcare, finance, entertainment, and transportation. AI-powered systems have the potential to revolutionize how we work, communicate, and live.

As technology continues to advance, the lines between narrow and general AI may blur, and the capabilities of machine learning algorithms will only become more impressive. Ethical considerations, regulation, and the responsible development of AI and ML will be critical to harnessing their full potential for the betterment of society.

The journey of AI and ML is an ongoing exploration, where each breakthrough brings us closer to creating machines that can truly understand, reason, and learn from the world around them. The future promises remarkable developments, making this an exciting era for those who are passionate about the intersection of technology and human intelligence.

Applications of Artificial Intelligence and Machine Learning:

Artificial Intelligence (AI) and Machine Learning (ML) have a wide range of applications across various industries and domains. Here are some key applications:

Natural Language Processing (NLP): Chatbots and virtual assistants use NLP to provide customer support and information. Language translation services like Google Translate use AI to convert text from one language to another.

Image and Video Analysis: Facial recognition technology is used for security and authentication. Image classification and object detection are applied in autonomous vehicles, medical imaging, and quality control in manufacturing.

Healthcare: Disease diagnosis: AI helps analyze medical images (X-rays, MRIs) to detect conditions like cancer or fractures.

Drug discovery: ML accelerates drug development by predicting potential compounds.

Personalized treatment: AI tailors treatment plans based on a patient's genetic makeup and medical history.

Finance: Fraud detection: ML models identify unusual patterns in financial transactions to prevent fraud.

Algorithmic trading: AI-driven algorithms make automated trading decisions based on market data.

Recommendation Systems: Content platforms like Netflix and Amazon use ML to suggest movies, products, or content based on user preferences.

Autonomous Vehicles: Self-driving cars use AI and sensor data to navigate and make real-time driving decisions.

Manufacturing: Predictive maintenance: AI anticipates equipment failures and optimizes maintenance schedules.

Quality control: AI identifies defects in products on assembly lines.

Retail: Inventory management: AI optimizes inventory levels to reduce waste and stockouts. Price optimization: ML models adjust pricing dynamically based on demand and competition.

Agriculture: Precision farming: AI analyzes data from sensors and drones to optimize crop yields and reduce resource usage.

Education: Personalized learning: AI adapts educational content to individual student needs. Automated grading: ML can grade assignments and tests, saving teachers time.

Energy: Grid optimization: AI helps manage power grids efficiently, integrating renewable energy sources. Energy consumption: ML optimizes energy use in buildings and industrial processes.

Human Resources: Resume screening: AI scans resumes to match candidates with job requirements. Employee retention: ML models predict which employees are likely to leave, helping with retention efforts.

Space Exploration: AI assists in planning space missions, autonomous navigation, and analyzing data from space telescopes.

Environmental Monitoring: AI analyzes data from satellites and sensors to track climate change, pollution, and natural disasters.

Cybersecurity: ML identifies and responds to cybersecurity threats in real-time. These are just a few examples of the many applications of AI and ML across industries. As technology continues to advance, we can expect these applications to expand and create new opportunities for innovation and problem-solving.

Artificial Intelligence and Machine Learning in business:

Artificial Intelligence (AI) and Machine Learning (ML) are playing increasingly vital roles in various aspects of business, transforming operations, decision-making, and customer engagement. Here are some ways AI and ML are helping businesses:

Data Analysis and Insights: AI and ML algorithms can analyze vast amounts of data quickly and extract valuable insights. This helps businesses make data-driven decisions, identify trends, and understand customer behavior.

Predictive Analytics: Machine learning models can predict future trends, customer preferences, and market fluctuations. This aids in demand forecasting, inventory management, and optimizing supply chains.

Customer Service and Support: AI-powered chatbots and virtual assistants provide round-the-clock customer support, answering queries, resolving issues, and even handling routine transactions. This improves customer satisfaction and reduces response times.

Personalization: AI algorithms analyze customer data to offer personalized product recommendations, content, and marketing messages. This enhances the customer experience and increases conversion rates.

Fraud Detection and Security: ML models can detect anomalies in financial transactions, helping businesses prevent fraud. They also enhance cybersecurity by identifying unusual patterns and potential threats in real-time.

Process Automation: AI-driven automation streamlines repetitive tasks and workflows, reducing operational costs and freeing up employees to focus on more strategic activities.

Sales and Marketing: AI assists in lead scoring, helping sales teams prioritize high-potential leads. It also optimizes digital marketing campaigns by targeting the right audience with personalized content.

Quality Control and Maintenance: In manufacturing, AI-powered sensors and cameras can detect defects and equipment failures in real-time, reducing downtime and improving product quality.

Human Resources: AI simplifies the recruitment process by analyzing resumes, conducting initial interviews, and identifying the most suitable candidates. It can also monitor employee performance and suggest training opportunities.

Supply Chain Optimization: ML models optimize supply chain operations by predicting demand, managing inventory, and optimizing logistics routes, leading to cost savings and improved efficiency.

Healthcare and Life Sciences: AI assists in medical diagnosis, drug discovery, and patient management, leading to more accurate diagnoses and personalized treatment plans.

Finance and Investment: AI-powered algorithms analyze market data to make investment decisions, manage portfolios, and optimize trading strategies.

Energy and Sustainability: AI optimizes energy consumption, reduces waste, and enhances sustainability efforts by monitoring and controlling energy-intensive processes.

Market Research and Competitive Analysis: AI tools analyze social media, news, and online reviews to provide insights into market sentiment and competitor strategies.

Voice and Speech Recognition: AI-driven speech recognition technology enhances customer interactions and aids in transcription services. AI and ML are helping businesses across various industries by improving efficiency, enhancing decision-making, and delivering better customer experiences. As technology continues to advance, their role in business is likely to expand further, offering new opportunities for growth and innovation.

Artificial Intelligence and Machine Learning in Education:

Artificial Intelligence (AI) and Machine Learning (ML) have significant applications in education, revolutionizing how students learn, teachers instruct, and institutions operate. Here are several ways AI and ML are making a positive impact in education:

Personalized Learning: AI-driven platforms can assess individual student strengths and weaknesses. They then adapt the curriculum to meet the unique learning needs of each student, offering tailored lessons and exercises.

Student Assessment and Feedback: ML algorithms can evaluate student performance in real-time. They provide immediate feedback on assignments and assessments, helping students understand their mistakes and areas for improvement.

Adaptive Content: AI can recommend supplementary learning materials, such as articles, videos, or quizzes, based on a student's progress and interests, enriching their educational experience.

Automated Grading: ML models can grade assignments, quizzes, and even essays. This frees up teachers' time for more valuable tasks, like providing personalized guidance and support.

Early Intervention: AI can identify students who may be struggling early in the semester. Teachers can then intervene with additional support, reducing dropout rates.

Language Learning: AI-powered language learning apps use speech recognition and natural language processing to improve pronunciation and comprehension.

Special Education: AI tools can be tailored to assist students with special needs, offering customized learning plans and adaptive resources.

Administrative Efficiency: AI streamlines administrative tasks such as enrollment, scheduling, and resource allocation, helping institutions run more efficiently.

Smart Content Creation: AI can generate educational content, such as practice questions, tests, and even textbooks, based on specific curriculum requirements.

Edutainment: AI-driven educational games and simulations make learning engaging and fun, helping students grasp complex concepts in an interactive way.

Predictive Analytics: ML models can predict students at risk of falling behind or dropping out, allowing institutions to provide targeted support and interventions.

Teacher Professional Development: AI can recommend professional development opportunities and resources to teachers based on their specific needs and goals.

Language Translation: AI-powered translation tools facilitate language accessibility for international students and help break down language barriers.

Tutoring Systems: AI-driven virtual tutors offer 24/7 assistance to students, answering questions and providing explanations on various subjects.

Research and Data Analysis: AI helps researchers in education by analyzing large datasets, identifying trends, and generating insights that inform educational policies and practices. The integration of AI and ML in education is fostering a more personalized, efficient, and effective learning experience for students of all ages. As technology continues to advance, the role of AI and ML in education is expected to expand, offering even more opportunities for enhancing the educational journey.

Artificial Intelligence and Machine Learning in Finance:

Artificial intelligence (AI) and machine learning (ML) have made significant inroads into the field of finance, revolutionizing the way financial institutions operate. Here are some key aspects of AI and ML in finance:

Algorithmic Trading: AI and ML are used to develop trading algorithms that analyze vast amounts of data to make trading decisions in real-time. These algorithms can identify market patterns, execute trades, and manage risk more efficiently than human traders.

Risk Management: AI can assess and predict risks by analyzing historical data and identifying potential financial market fluctuations or credit defaults. ML models are used for credit scoring and fraud detection to minimize risks for lenders and investors.

Portfolio Management: AI-powered robo-advisors offer automated portfolio management services, making personalized investment recommendations and managing portfolios based on individual risk profiles and financial goals.

Customer Service: Chatbots and virtual assistants use AI to provide customer support, answer inquiries, and execute basic financial transactions, improving the customer experience.

Fraud Detection: Machine learning models are employed to detect fraudulent transactions by identifying unusual patterns or anomalies in real-time, helping financial institutions prevent unauthorized activities.

Credit Underwriting: AI assesses creditworthiness by analyzing a wide range of data sources, providing more accurate and efficient lending decisions for personal and business loans.

Regulatory Compliance: AI and ML assist in automating compliance processes and monitoring transactions to ensure financial institutions adhere to regulatory requirements.

Quantitative Analysis: AI helps financial analysts by quickly processing vast datasets and uncovering insights, which can inform investment decisions and risk assessments.

Natural Language Processing (NLP): NLP techniques are used to analyze news, social media, and other textual data to gauge market sentiment and make predictions about market movements.

Market Forecasting: ML models can predict asset prices, market trends, and economic indicators based on historical data, aiding in decision-making for investment strategies.

Personalized Banking: AI allows banks to offer personalized financial products and services to customers, tailoring recommendations to individual financial situations and goals.

The integration of AI and ML in finance has the potential to enhance efficiency, reduce risks, and improve decision-making, but it also raises important ethical and regulatory considerations related to data privacy, security, and transparency. As technology continues to advance, the financial industry is likely to see further transformation through AI and ML applications.

Importance of Artificial Intelligence and Machine Learning:

Artificial Intelligence (AI) and Machine Learning (ML) have emerged as transformative technologies, reshaping the way we live, work, and interact with the world. AI, the broader field, focuses on creating machines that can mimic human intelligence, while ML is a subset of AI that deals with the development of algorithms that can learn from data and improve their performance over time. These technologies hold immense promise, driving innovations in a multitude of industries and influencing the fabric of modern society. AI and ML have become ubiquitous in our daily lives, impacting various sectors such as healthcare, finance, transportation, and education. One of the most notable applications of AI is in the field of healthcare. Machine learning algorithms can analyze medical images like X-rays, CT scans, and MRIs, aiding in disease diagnosis. Additionally, predictive models can identify health trends, allowing for early intervention and improved patient outcomes. Telemedicine platforms and AI-driven chatbots are making healthcare more accessible, providing medical advice and diagnoses remotely. These advancements have proven invaluable during the COVID-19 pandemic, where they helped in patient care, vaccine development, and tracking the spread of the virus. In finance, AI has revolutionized trading with algorithmic trading systems making real-time decisions, optimizing portfolios, and minimizing risk. Fraud detection algorithms analyze transaction data to identify unusual patterns and prevent financial crimes. Personalized financial services powered by AI provide customers with tailored investment advice and banking solutions.

Transportation is another arena where AI and ML are ushering in a new era. Self-driving cars, enabled by computer vision and deep learning, have the potential to enhance road safety and redefine urban mobility. Intelligent traffic management systems can reduce congestion and improve the flow of traffic in cities. Logistics and supply chain management have also benefited from predictive analytics, optimizing routes and reducing fuel consumption.

Education is undergoing a transformation through personalized learning, where AI algorithms adapt coursework to students' individual needs and abilities. Intelligent tutoring systems offer real-time feedback and support, enhancing the learning process. Likewise, the workplace is evolving with AI-powered tools assisting in recruitment, employee engagement, and even predicting workplace trends and challenges.

Environmental conservation is another critical area where AI and ML are making a positive impact. AI is being employed for wildlife monitoring, helping to protect endangered species from poaching and habitat destruction. Climate modeling uses AI to analyze vast datasets and predict climate changes, assisting in the development of mitigation strategies.

Conclusion:

Despite the immense promise of AI and ML, they also raise ethical and societal concerns. Issues related to data privacy, bias in algorithms, and job displacement due to automation require careful consideration. Striking the right balance between reaping the benefits of AI and addressing these concerns is a significant challenge for policymakers and industry leaders.

In conclusion, Artificial Intelligence and Machine Learning are at the forefront of technological innovation, transforming industries and improving the quality of life for individuals around the world. As these technologies continue to evolve, they hold the potential to solve complex problems, foster innovation, and make our lives more convenient. However, it is essential to approach the deployment of AI and ML with a clear understanding of their implications and to ensure that they are developed and used responsibly, ethically, and for the betterment of society.

5. Artificial Intelligence and Machine Learning Applications in Human Resource Management

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Introduction:

In the rapidly evolving landscape of the modern business world, technology has become an integral part of nearly every facet of operations. One area that has seen a remarkable transformation through the integration of technology is Human Resource Management (HRM).

The advent of Artificial Intelligence (AI) and Machine Learning (ML) has revolutionized the way organizations manage their workforce, optimize processes, and enhance employee experiences. In this article, we will delve into the various applications of AI and ML in HRM, exploring how these technologies are reshaping recruitment, employee engagement, performance management, and decision-making.

The Evolution of HRM in the Digital Age:

Human Resource Management is no longer confined to administrative tasks and personnel management. In today's fast-paced business environment, HRM plays a strategic role in driving organizational success. The integration of AI and ML into HRM practices has redefined the way HR professionals operate, enabling them to leverage data-driven insights for informed decision-making.

AI refers to the simulation of human intelligence in machines that are capable of performing tasks that typically require human intelligence, such as understanding natural language, recognizing patterns, and making predictions. ML, a subset of AI, involves the use of algorithms that allow computers to learn from and make predictions or decisions based on data. The synergy of these technologies is transforming HRM into a dynamic, efficient, and proactive function.

Recruitment Reimagined:

Recruitment is a pivotal function within HRM, as organizations compete to attract and retain top-tier talent. Traditionally, the recruitment process has been time-consuming and labor-intensive, often resulting in inefficiencies and biased decision-making. The infusion of AI and ML has revolutionized this process, offering innovative solutions that streamline and enhance recruitment efforts.

1. **Resume Screening and Candidate Matching:** AI-powered systems are capable of scanning and analyzing a vast number of resumes within seconds. These systems extract relevant information, such as skills, qualifications, and experiences, to identify the best-fit candidates for a particular role. ML algorithms then match candidates to job descriptions, taking into account historical data and patterns, thus significantly reducing the time and effort required for initial screenings.
2. **Video Interviews and Assessment:** Video interviews have become an integral part of modern recruitment. AI algorithms can analyze these interviews, capturing both verbal and non-verbal cues to assess a candidate's suitability for a role. This approach offers insights beyond traditional assessments, enabling recruiters to make more informed decisions.
3. **Bias Reduction:** Unconscious bias has long been a concern in the recruitment process. AI-driven recruitment tools can help mitigate bias by focusing on objective criteria rather than subjective judgments. This contributes to creating a more diverse and inclusive workforce.
4. **Predictive Analytics:** ML algorithms can analyze historical recruitment data to predict the success of candidates in specific roles. This predictive capability allows HR professionals to identify candidates with the highest potential for success, improving the quality of hires.

Empowering Employee Engagement:

Employee engagement is a cornerstone of organizational success. Engaged employees are more productive, innovative, and committed to their roles. AI and ML offer novel ways to measure and enhance employee engagement, fostering a positive and vibrant work environment.

1. **Sentiment Analysis:** AI algorithms can analyze a variety of data sources, including employee feedback, surveys, and social media interactions, to gauge employee sentiment. By understanding the emotions and attitudes of employees, organizations can identify areas of concern and address them proactively.
2. **Personalized Learning and Development:** ML algorithms can assess individual employee skills, learning preferences, and career aspirations. This data is then used to recommend personalized training and development programs, enabling employees to acquire new skills and advance within the organization.
3. **Real-time Feedback and Recognition:** AI-powered platforms facilitate real-time feedback and recognition systems. Managers can promptly acknowledge and reward employee achievements, fostering a culture of appreciation and motivation.
4. **Employee Well-being:** AI-driven tools can monitor employee well-being by analyzing factors such as work hours, stress levels, and interactions. This data helps organizations identify and address potential burnout or health-related issues.

Transforming Performance Management:

Performance management is undergoing a profound transformation, moving away from traditional annual reviews toward continuous feedback and data-driven insights.

AI and ML are at the forefront of this transformation, enabling organizations to create more effective and impactful performance management processes.

1. **Continuous Feedback:** AI-powered tools facilitate ongoing performance tracking and feedback. By aggregating data from various sources, such as project outcomes and peer reviews, these tools provide a comprehensive view of an employee's performance over time.
2. **Skill Gap Analysis:** AI can analyze employee skills and competencies in relation to job requirements. This analysis identifies skill gaps and recommends relevant training opportunities, ensuring that employees are equipped with the skills necessary to excel in their roles.
3. **Predictive Analytics for Performance:** ML algorithms predict performance trends based on historical data and patterns. This predictive capability allows managers to intervene and provide support before performance issues escalate.

Informed Decision-Making:

Data-driven decision-making is at the heart of effective HRM. AI and ML technologies provide HR professionals with valuable insights that drive informed choices and strategic planning.

1. **Predictive HR Analytics:** ML algorithms analyze vast amounts of HR data to predict trends related to turnover, employee engagement, and performance. These predictions empower HR teams to proactively address challenges and capitalize on opportunities.
2. **Workforce Planning:** AI-powered tools assist in workforce planning by predicting future staffing needs based on business goals and market trends. This ensures that organizations have the right talent in place to achieve their objectives.
3. **Employee Churn Analysis:** AI can analyze historical data to identify patterns associated with employee turnover. This information enables HR teams to implement retention strategies and reduce attrition.

Ethical Considerations and Challenges:

As AI and ML become increasingly integrated into HRM practices, ethical considerations and challenges come to the forefront. Ensuring data privacy, transparency, and fairness in AI algorithms is paramount to prevent bias and discrimination in decision-making processes. Moreover, concerns related to job displacement and the human touch in HR interactions must be carefully addressed.

Conclusion:

A New Era of HRM:

Artificial Intelligence and Machine Learning are reshaping the landscape of Human Resource Management, propelling it into a new era characterized by efficiency, objectivity, and innovation.

From revolutionizing recruitment processes to enhancing employee engagement and transforming performance management, AI and ML technologies offer a multitude of applications that empower HR professionals to make data-driven decisions. As organizations continue to embrace these technologies, it is imperative to navigate the ethical considerations and challenges, ensuring that the future of work remains inclusive, fair, and optimized for success. The journey is ongoing, and the potential for AI and ML to revolutionize HRM is boundless.

6. Environmental Sustainability and Green Initiatives in Business: Paving the Path to a Greener Future

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Introduction:

The Importance of Environmental Sustainability

In an era marked by rapid industrialization, urbanization, and the relentless pursuit of economic growth, the state of our planet's environment has come under immense strain. Environmental sustainability has emerged as a critical global concern, necessitating a comprehensive reevaluation of our approach to business and economic activities. As we confront the challenges of climate change, resource depletion, and ecosystem degradation, the role of businesses in shaping a more sustainable future has gained unprecedented significance.

The Role of Business in Environmental Sustainability: Businesses play a pivotal role in the quest for environmental sustainability. With their vast resources, innovative capacity, and reach, businesses can drive positive change by adopting green initiatives that not only mitigate environmental impact but also contribute to long-term profitability and societal well-being. This article delves into the multifaceted world of environmental sustainability and explores the growing trend of green initiatives within the business landscape.

2. Understanding Environmental Sustainability:

Definition and Concepts: At its core, environmental sustainability refers to the responsible and ethical management of natural resources to ensure that present and future generations can meet their needs without compromising the well-being of the planet. It encompasses a holistic view of environmental, social, and economic dimensions, emphasizing the interconnectedness of these factors.

The Three Pillars of Sustainability: Environmental sustainability is often conceptualized through the lens of three interconnected pillars: environmental, social, and economic. The environmental pillar focuses on minimizing negative ecological impacts, preserving biodiversity, and reducing carbon emissions. The social pillar emphasizes social equity, human rights, and community well-being. The economic pillar seeks to ensure long-term economic viability without depleting resources or causing environmental harm.

3. Challenges and Consequences of Unsustainable Business Practices:

Climate Change and Global Warming: One of the most pressing challenges of our time is climate change, primarily driven by human activities such as burning fossil fuels and deforestation. Rising temperatures, melting ice caps, and extreme weather events pose substantial risks to ecosystems, societies, and economies.

Resource Depletion and Biodiversity Loss: Unsustainable business practices contribute to the depletion of natural resources, from water and minerals to forests and fisheries. Biodiversity loss, driven by habitat destruction and pollution, threatens the delicate balance of ecosystems and undermines their resilience.

Social and Economic Impacts: Environmental degradation disproportionately affects marginalized communities and exacerbates social inequalities. Additionally, businesses that disregard sustainability may face reputational damage, legal liabilities, and operational disruptions.

4. The Emergence of Green Initiatives in Business:

Corporate Social Responsibility (CSR): Many businesses are recognizing the importance of Corporate Social Responsibility (CSR) as a fundamental component of their operations. CSR involves integrating environmental and social concerns into business strategies and decision-making processes, thereby contributing to positive societal and environmental outcomes.

Sustainable Business Models: Innovative sustainable business models are reshaping industries across the globe. From the sharing economy to product-as-a-service models, businesses are finding ways to deliver value while minimizing resource consumption and waste generation.

Circular Economy Principles: The concept of a circular economy emphasizes reducing, reusing, and recycling materials to minimize waste and promote resource efficiency. Businesses are adopting circular economy principles by designing products for longevity, repairing and refurbishing items, and incorporating recycled materials into their production processes.

5. Benefits of Integrating Green Initiatives in Business:

Competitive Advantage: Businesses that proactively embrace green initiatives often gain a competitive advantage by differentiating themselves in the market. Consumers are increasingly favouring environmentally conscious brands and products, driving demand for sustainable options.

Cost Savings and Efficiency Improvements: Green initiatives can lead to significant cost savings through reduced energy consumption, streamlined operations, and decreased waste generation. Investments in energy-efficient technologies and sustainable supply chain practices can yield substantial financial returns.

Positive Brand Image and Customer Loyalty: Companies that demonstrate a commitment to environmental sustainability build a positive brand image and foster customer loyalty. Consumers are more likely to support businesses that align with their values, leading to increased customer retention and brand loyalty.

6. Examples of Successful Green Initiatives:

Sustainable Supply Chain Management: Businesses are recognizing the importance of sustainable supply chain practices to minimize environmental impact. This includes responsible sourcing, ethical labour practices, and reducing the carbon footprint associated with transportation and logistics.

Renewable Energy Adoption: The transition to renewable energy sources, such as solar and wind power, is a hallmark of green business initiatives. Companies are installing renewable energy systems to power their operations and reduce their reliance on fossil fuels.

Waste Reduction and Recycling Programs: From "zero-waste" manufacturing processes to comprehensive recycling programs, businesses are finding innovative ways to reduce waste and promote resource efficiency. This includes minimizing packaging waste and repurposing byproducts.

7. Barriers to Green Initiatives and Overcoming Challenges:

Financial Constraints: While green initiatives offer long-term benefits, upfront costs can be a barrier to implementation. However, businesses can overcome this challenge by exploring financing options, including grants, subsidies, and impact investments.

Lack of Awareness and Education: A lack of awareness and understanding about environmental sustainability can hinder the adoption of green initiatives. Education and training programs can empower employees and stakeholders to champion sustainability within the organization.

Regulatory Hurdles: Inconsistent or inadequate regulations can create obstacles for businesses seeking to implement green initiatives. Engaging with policymakers and advocating for stronger environmental regulations can drive systemic change.

8. Implementing Green Initiatives: A Step-by-Step Guide:

Conducting Sustainability Audits: Businesses can start by conducting comprehensive sustainability audits to assess their current environmental impact and identify areas for improvement.

Setting Clear Goals and Targets: Defining clear and measurable sustainability goals helps businesses track progress and hold themselves accountable for achieving positive environmental outcomes.

Engaging Stakeholders and Employees: Engaging employees, customers, suppliers, and local communities is essential for the successful implementation of green initiatives. Stakeholders buy-in fosters a culture of sustainability and enhances the impact of initiatives.

9. Measuring and Reporting Environmental Impact:

Key Performance Indicators (KPIs): Measuring the environmental impact of green initiatives requires the use of key performance indicators (KPIs) such as carbon footprint, water usage, and waste reduction. These metrics provide insights into progress and areas for improvement.

Sustainability Reporting Frameworks: Adopting recognized sustainability reporting frameworks, such as the Global Reporting Initiative (GRI) or the Sustainability Accounting Standards Board (SASB), allows businesses to transparently communicate their environmental performance to stakeholders.

10. Collaboration and Partnerships for Greater Impact:

Public-Private Partnerships: Collaboration between businesses, governments, and non-governmental organizations (NGOs) can amplify the impact of green initiatives. Public-private partnerships facilitate knowledge sharing, resource pooling, and coordinated action.

Industry Collaboration and Best Practices Sharing: Within industries, businesses can collaborate to establish best practices and industry standards for sustainability. Sharing insights and experiences accelerates progress toward collective environmental goals.

11. Future Trends and Innovations in Green Business Practices:

Technological Advancements: Rapid technological advancements, such as artificial intelligence and the Internet of Things (IoT), are enabling businesses to optimize resource use, reduce energy consumption, and enhance sustainability across operations.

The Rise of ESG Investing: Environmental, Social, and Governance (ESG) considerations are increasingly influencing investment decisions. Businesses that prioritize ESG factors are likely to attract socially conscious investors and secure capital more effectively.

Policy and Regulation Evolution: As global awareness of environmental issues grows, governments are enacting stricter regulations and incentives to promote sustainable business practices. Companies that proactively adapt to evolving regulatory landscapes will thrive in the changing business environment.

12. Conclusion:

The Imperative of Green Business Practices: Environmental sustainability and green initiatives have transcended the realm of idealism to become imperatives for businesses seeking long-term success and a positive societal impact.

Embracing sustainability is no longer a choice; it is a responsibility that businesses must uphold to secure a better future for both humanity and the planet.

Our Shared Responsibility for a Sustainable Future: As we navigate the complex challenges posed by environmental degradation, businesses have a unique opportunity to lead the charge toward a greener and more sustainable world. By integrating green initiatives into their operations, fostering innovation, and collaborating with stakeholders, businesses can contribute to the global effort to safeguard our planet for generations to come. It is a journey that requires collective action, unwavering commitment, and a shared vision of a brighter and more sustainable future.

7. Green HR Practice Initiatives in The Current Organizational Scenario

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Abstract:

From a financial to an environmental perspective, the corporate world is evolving. All businesses desire to support environmental sustainability because it will benefit their needs in the future. Human resource management and environmental management are combined to form "green human resource management." It comprises of two components: intellectual capital protection and environmental friendliness. The term "green human resource" refers to HR initiatives that support the sustainable and environmentally friendly use of natural resources.

Keywords:

Green HRM, Environment Management, Eco- Friendly, Environment Sustainability.

Introduction:

Organizations are moving toward green HRM now to ensure the long-term sustainability of natural resources. Green HR practices include things like teleconferences, online interviews, electronic application forms, virtual interviews, and more. Before making a business decision, an organization must assume responsibility for social and environmental challenges. The majority of organizations have adopted the "3 R" (Reduce, Reuse, and Recycling) technique to help the environment and cut costs. The organization should transition to green HR practices in order to utilize natural resources sustainably for a longer time and for the benefit of society.

For the smooth operation of the business and environmental protection, Indian public companies like Bharat Heavy Electrical Ltd, Bharat Dynamics Ltd, National Minerals Development Corporation, Hindustan Aeronautics Ltd, and Neyveli Lignite Corporation

Ltd are implementing green HR practices for the employees. Integrating environmental sustainability into human resource management is crucial for organizations. The integration of green HR practices into HR procedures aids in determining the company's readiness for green project launch, creating an eco-advantage culture, identifying environmental problems, and attempting to address them by incorporating an environment management system into business strategy.

Literature Review:

The concept of Green Human Resource Management (HRM) has gained significant attention in recent years due to growing environmental concerns and the need for sustainable business practices. Green HR practices involve integrating environmentally friendly initiatives into HRM strategies to promote sustainable development within organizations. This literature review aims to explore the current state of research on Green HR practice initiatives in the organizational context, focusing on key themes, theoretical perspectives, challenges, and opportunities.

Fernando and Dharmage (2016) conducted a study examining the relationship between Green HR practices and organizational performance. Their findings revealed a positive correlation between the adoption of Green HRM practices and overall organizational performance.

In their research, Shrivastava and Shrivastava (2018) explored the integration of sustainability criteria into the recruitment and selection process. They proposed that organizations should consider not only technical skills but also environmental consciousness when hiring new employees. This approach helps build a workforce that shares a commitment to sustainability and aligns with the organization's green objectives. Studies by Jackson and Seo (2020) highlighted the importance of green training and development programs in promoting sustainability among employees. Green training equips employees with the necessary knowledge and skills to engage in environmentally responsible behaviours. Such initiatives cultivate a culture of sustainability and empower employees to contribute actively to the organization's environmental goals.

Research by Molina-Azorín, Tarí, and López-Gamero (2016) emphasized the significance of employee engagement in green initiatives. They found that organizations that involve employees in environmental decision-making and encourage green involvement experience higher levels of employee commitment and motivation. Engaged employees actively participate in green practices, which, in turn, leads to a positive impact on the organization's environmental performance.

Chaudhary and Sharma (2019) examined the integration of sustainability objectives into performance management systems. They proposed that aligning performance evaluations with green goals can incentivize employees to adopt eco-friendly practices. Ghosh and Jha (2017) identified resistance from employees and management as a significant challenge. Chan, Ho, and Choi (2021) argued that embracing green initiatives can improve an organization's public image and attract environmentally conscious customers and employees.

Research consistently indicates that Green HR practices positively impact organizational performance, employee engagement, and overall sustainability. Challenges such as resistance and lack of standardization should be addressed, but the opportunities for organizations to embrace Green HR initiatives are significant. In light of the growing environmental concerns and the global call for sustainability, adopting Green HR practices is crucial for organizations to remain competitive and contribute to a more sustainable future.

Objectives of the Study:

To comprehend the benefits and difficulties associated with implementing green HRM.

Discussion:

Green Recruitment and Selection Procedure:

Green recruitment and selection procedures for the organization's human resources make up green procurement. Today, a lot of businesses use email and websites to solicit employee information for hiring. Green HR methods for candidate selection include online, virtual, and telecommuting interviews. It results in a decrease in travel time, energy use, expense, and environmental damage. As part of the selection process, the green criteria should be established in order to both choose and draw in qualified candidates who are environmentally conscious. It is crucial for the organization that the right individual be chosen for the right position at the right time.

Green Training and Development:

Online training, teleconferencing, video calls, online case studies, web-based training modules, and interactive media are all considered forms of green training because they assist employees function more efficiently in green HR practices. For employees to grow and learn about environmental management, management development must include green HR practices and learning plans including programs, seminars, and workshops.

Green Compensation and Reward System:

Compensation encourages employees to work very energetically and enthusiastically for the organization. Organizations include monetary remuneration and non-monetary incentives in employee compensation packages in accordance with the individual's acquisition of green skills, contributions, and accomplishments in green HR practices. Rewarding and recognizing employees for their contributions to the environment through promotions, awards, public acclaim, and other means is another tactic.

Green Performance Management System:

Organizations that use performance appraisal methods include one of the scales as "green HR practices," which include familiarizing employees with environmental issues, raising their awareness of environmental protection, reducing pollution, promoting environmental

sustainability, and engaging them in environmental management as a key performance area. Every individual inside the organization is given green targets, goals, and responsibilities that are taken into account in the performance evaluation system in order to ensure that the organization's green policies are followed.

Green Industrial Relations:

The organization must implement an environmental awareness program that addresses concerns of sustainability for the environment, employee motivation, and employee health, safety, and working conditions. Green workplace policies include flexible working hours, carpooling, free transportation, teleworking, encouraging employees to use eco-friendly products, avoiding the use of plastic and glass products, and supporting employees' involvement in environmental initiatives and programs. Employee involvement in the green management system rises as a result.

Green Redressal Mechanism:

Employee behavior must be changed for the implementation of green HRM, which is challenging. Making stringent policies governing the use of green HR practices within the organization is essential. It is necessary to take corrective action in response to employee complaints about environmental issues and environmentally unfriendly behavior.

Advantages In Implementation of Green HRM:

- Employees receive job satisfaction, and environmental challenges are addressed.
- Acquisition of green talent prospects results in lower costs for spreading awareness, which is necessary for an organization to obtain a competitive advantage.
- Programs, Seminar and Conference Planning:
- Online training and teleconferences cut down on the employee's travel expenses and time.
- Decreases in carbon emissions and pollution control.
- It aids in decreasing labor turnover and improving employee retention.
- It develops the organization's brand image and draws in talented candidates.
- In order to maintain ecological balance within the organization, it strengthens relationships between all stakeholders and the general public.
- It strengthens the company's ability to achieve competitive advantages in the market and industry.
- It aids in lowering carbon emissions and global warming.

Challenges in Implementation of Green HRM:

- Acquiring candidates with green talent for the organization is challenging.
- When conducting all activities online, it can be difficult to close the human resource communication gap within the organization.
- Employees who are forced to promote environmental sustainability become dissatisfied since they have no motivation in doing so.

- The implementation of green HR practices requires a large initial investment.
- It took a lot of time to change staff behavior.
- Measuring the effectiveness of an employee's green HR practices has proven challenging.

Suggestions:

- The vision and goal of the organization can include green HR practices.
- It is the organization's duty to provide employee job satisfaction and address environmental-related problems.
- The goal of the organization is to obtain a competitive edge. Engaging employees in green HRM practices is a requirement of the organization.
- Employers can effectively engage their employees in their job by using green HR practices.

Conclusion:

The corporate sector has a primary obligation to adopt green initiatives and practices within the company. Corporate sector initiatives address the majority of environmental challenges. Therefore, it is the ideal time for the organization to integrate human resource activity into the environment management system for the improvement of environmental sustainability and efficient use of natural resources. In addition, this organization focuses on implementing green HR practices to lower costs, improve employee involvement in green HR practices, and reduce carbon footprint and environmental degradation.

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8. Harmonizing Green HRM and HRIS: A Synergistic Approach Through AHP and Electre MCDM Tools for Sustainable Workforce Management

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Abstract:

In an era of heightened environmental consciousness, organizations are increasingly recognizing the imperative of sustainable practices in their operations. This realization has extended to the realm of human resource management (HRM), giving rise to the concept of Green HRM, a strategic approach aimed at harmonizing environmental concerns with HR practices. A pivotal catalyst in the effective implementation of Green HRM is the integration of Human Resource Information Systems (HRIS), which has revolutionized the way HR activities are managed. However, the true potency of this integration is unlocked when coupled with advanced decision-making tools. This paper explores the synergistic convergence of Green HRM, HRIS, and a powerful combination of Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE) as Multi-Criteria Decision-Making (MCDM) tools. The Analytic Hierarchy Process (AHP) offers a structured methodology for decision-making, allowing organizations to evaluate and prioritize complex, multi-faceted criteria.

By applying AHP, organizations can quantitatively assess the environmental impact of HR practices, enabling the identification of sustainable alternatives in areas such as recruitment, training, performance appraisal, and employee engagement. ELECTRE, on the other hand, is a robust outranking method, exceptionally suited for situations involving multiple criteria with varying levels of importance. When combined with Green HRM and HRIS, ELECTRE facilitates the identification of sustainable HR strategies that align with organizational objectives, taking into account the diverse ecological, social, and economic factors that influence HR decisions. This paper presents a comprehensive framework that harnesses the capabilities of AHP and ELECTRE within the context of Green HRM through HRIS. It delves into the application of this framework across different HR domains, showcasing real-world examples where organizations have leveraged these tools to make environmentally-conscious HR decisions. The paper highlights the transformational potential of this integrated approach, not only in fostering a more sustainable work environment but also in elevating overall organizational performance and resilience. By integrating AHP and ELECTRE into Green HRM through HRIS, organizations can foster a culture of environmental responsibility while simultaneously optimizing HR processes.

This paper illuminates a path towards a more sustainable future, where HRM becomes a driving force in mitigating environmental impact, enhancing corporate social responsibility, and ensuring long-term organizational success.

Keywords:

Green HRM, HRIS integration, Multi-Criteria Decision-Making (MCDM), Analytic Hierarchy Process (AHP), Sustainability practices, Environmental responsibility.

Introduction:

In today's dynamic global landscape, sustainability has emerged as a pivotal concern, resonating not only within ecological realms but also across the core fabric of organizations. With mounting environmental challenges and increasing stakeholder expectations, businesses have been compelled to integrate sustainability principles into their operational strategies. This transformation has extended beyond traditional corporate realms to encompass all facets of business, including the pivotal human resource management (HRM) domain.

Green HRM, a strategic paradigm that intertwines environmental considerations with HR practices, represents a powerful response to this emerging environmental consciousness. The essence of Green HRM lies in the alignment of human resource activities with sustainable objectives, fostering a harmonious relationship between organizational growth and ecological stewardship. By embracing Green HRM, organizations not only demonstrate corporate social responsibility but also tap into a wellspring of benefits ranging from enhanced employee engagement, improved corporate image, reduced operational costs, to long-term resilience.

In this pursuit of greener pastures, technology has emerged as an indispensable ally. The advent of Human Resource Information Systems (HRIS) has revolutionized the way HR activities are conducted, making processes more efficient, accurate, and data driven. However, the true potency of HRIS is realized when coupled with advanced decision-making tools capable of navigating the complex terrain of sustainability-oriented choices. Herein lies the intersection of Green HRM, HRIS, and the dynamic world of Multi-Criteria Decision-Making (MCDM) tools.

This paper delves into this convergence of Green HRM and HRIS, bolstered by a sophisticated amalgamation of the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE) MCDM tools. AHP, a structured approach to decision-making, enables organizations to systematically evaluate diverse criteria, thereby facilitating the identification of sustainable HR practices. ELECTRE, a robust outranking methodology, further augments this framework by providing a nuanced understanding of the relative importance of multiple criteria.

The essence of this paper lies not only in conceptual exploration but in the real-world application of this integrated approach. By showcasing examples where organizations have harnessed the power of AHP and ELECTRE within the Green HRM-HRIS nexus, we

illustrate the transformative potential of this synergy. We delve into how these tools enable organizations to make environmentally conscious HR decisions while ensuring alignment with strategic objectives and organizational realities.

As we embark on this journey, we envision a future where HRM serves as a beacon of sustainability, fostering a workforce that is not just productive but also environmentally responsible. By integrating AHP and ELECTRE into the Green HRM-HRIS landscape, organizations can stride confidently towards sustainable workforce management, driving innovation, achieving corporate goals, and nurturing a culture that values both human capital and our precious planet. The subsequent sections of this paper will unravel this integrated framework, offering insights into its application, benefits, and potential challenges.

Literature Review:

The convergence of Green Human Resource Management (Green HRM) and Human Resource Information Systems (HRIS) empowered by Multi-Criteria Decision-Making (MCDM) tools has gained significant attention in recent years due to its potential to align sustainability objectives with HR practices. This section reviews key research contributions that explore various aspects of this integrated approach, highlighting the benefits, challenges, and real-world applications.

Green HRM:

The concept of Green HRM has its roots in the seminal work of Stone (2010), who introduced the idea of integrating environmental considerations into HR practices to promote sustainable organizational outcomes.

The principles of Green HRM emphasize eco-friendly recruitment, training, performance appraisal, and employee engagement strategies (Jackson et al., 2014). Research by Renwick et al. (2013) underlines how Green HRM positively impacts employee engagement, leading to improved overall organizational performance and reduced turnover rates.

Organizational commitment to environmental sustainability is a key driver of Green HRM adoption (Alfes et al., 2013). Green HRM practices are found to positively influence employee attitudes towards the organization (Kanapathipillai, 2016), enhancing corporate reputation and attractiveness as an employer (Shen et al., 2019).

HRIS in the Green HRM Context:

The integration of Human Resource Information Systems (HRIS) is pivotal in operationalizing Green HRM practices. HRIS enhances the efficiency of data-driven HR activities (Parry & Tyson, 2011). The work of Lengnick-Hall and Moritz (2003) highlights the role of HRIS in automating sustainability reporting, which aids in monitoring and improving eco-friendly initiatives. Furthermore, HRIS facilitates the tracking of employees' environmental training and certifications, ensuring that sustainability knowledge is disseminated across the organization (Zhang et al., 2017).

The integration of HRIS with Green HRM practices supports the implementation of environmental training programs, creating a more environmentally aware workforce (Bassi & Ludwig, 2015).

MCDM Tools: AHP and ELECTRE:

The adoption of Multi-Criteria Decision-Making (MCDM) tools, specifically the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE), significantly enhances the decision-making process within the context of Green HRM. AHP provides a structured framework for evaluating and prioritizing multiple criteria (Saaty, 2008). Studies by Garg and Sharma (2014) and Sahu and Dash (2016) demonstrate the application of AHP in environmental decision-making, making it an effective tool for selecting sustainable HR practices. ELECTRE, as an outranking methodology, takes into account both quantitative and qualitative criteria (Roy, 1996). Its application in sustainability assessments is highlighted by Roy and Słowiński (2016), showcasing how ELECTRE aids in ranking HR practices based on ecological, social, and economic factors.

Integration of Green HRM, HRIS, and MCDM Tools:

While there is substantial individual research on Green HRM, HRIS, and MCDM tools, few studies explicitly integrate these components. However, emerging contributions are promising. A study by Liu et al. (2021) presents a framework that integrates Green HRM with HRIS, utilizing AHP for decision-making in the context of employee training for environmental responsibility. This research highlights the effectiveness of combining these elements in fostering sustainability. This paper builds upon the foundations laid by previous research, emphasizing the synergy of Green HRM, HRIS, and the MCDM tools AHP and ELECTRE. By examining real-world applications and outcomes of this integrated approach, it contributes to the expanding body of knowledge in this domain, paving the way for more sustainable and environmentally responsible workforce management practices.

Research Methodology:

The research methodology employed in this study aims to comprehensively explore the convergence of Green Human Resource Management (Green HRM), Human Resource Information Systems (HRIS), and the application of Multi-Criteria Decision-Making (MCDM) tools, specifically the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE). This section outlines the research design, data collection methods, and the rationale behind the selection of AHP and ELECTRE as the MCDM tools.

Research Design:

This study adopts a mixed-methods research design that combines qualitative and quantitative approaches. The qualitative aspect involves a comprehensive literature review, as highlighted in the earlier sections, to establish the theoretical foundations of Green HRM, HRIS, and the utilization of MCDM tools for sustainability-oriented decision-making.

The quantitative component involves the application of the integrated framework of Green HRM, HRIS, AHP, and ELECTRE in a real-world context. A case study approach is employed, selecting a representative organization as the research subject. This approach allows for an in-depth exploration of the application of AHP and ELECTRE within the Green HRM-HRIS landscape, providing insights into practical challenges, benefits, and outcomes.

Data Collection:

1. **Secondary Data:** The literature review serves as a critical source of secondary data. A comprehensive analysis of peer-reviewed journal articles, books, conference proceedings, and reputable online resources informs the theoretical framework and establishes the existing body of knowledge in the domain of Green HRM, HRIS, and MCDM.
2. **Primary Data:** The primary data collection involves multiple sources:
3. **Structured Interviews:** Key stakeholders within the selected organization, including HR managers, sustainability officers, and decision-makers, are interviewed. These interviews aim to understand the organization's existing HR practices, the integration of HRIS, and the environmental considerations in decision-making.
4. **Data from HRIS:** Where applicable and with the consent of the organization, relevant data from the HRIS, such as employee training records, performance appraisal metrics, and sustainability-related indicators, are gathered.
5. **Survey Questionnaires:** Customized survey questionnaires are administered to employees to gauge their awareness of green initiatives, their perceptions of the organization's commitment to sustainability, and the impact of training and engagement activities.

Selection of AHP and ELECTRE:

The selection of AHP and ELECTRE as the MCDM tools is based on their suitability for the research objectives. AHP provides a structured framework for prioritizing multiple criteria, which is essential when evaluating the environmental impact of HR practices. ELECTRE, as an outranking method, facilitates the identification of HR strategies that align with diverse ecological, social, and economic factors.

AHP's quantitative approach complements ELECTRE's ability to handle qualitative and quantitative criteria simultaneously, creating a robust decision-making framework for sustainable HR practices. By integrating these tools, the research aims to provide a holistic assessment of HR decisions' ecological implications while considering their alignment with organizational goals.

The research methodology employed in this study combines qualitative and quantitative approaches, leveraging secondary and primary data to investigate the integration of Green HRM, HRIS, AHP, and ELECTRE within an organizational context. This methodology ensures a comprehensive understanding of the benefits, challenges, and outcomes of the integrated framework, contributing to the advancement of sustainable workforce management practices.

Data Analysis and Interpretations:

The data collected from the questionnaire provided valuable insights into the integration of Green Human Resource Management (Green HRM), Human Resource Information Systems (HRIS), and the application of Multi-Criteria Decision-Making (MCDM) tools, specifically the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE). This section presents an analysis of the responses, providing explanations of the workings of the tools and framework used in the context of the research objectives outlined in the paper.

1. Familiarity with Green HRM and Perceived Importance:

The data shows that a majority of respondents (96%) are familiar with the concept of Green HRM, indicating a strong awareness of the importance of integrating environmental considerations into HR practices. Over 80% of participants perceive Green HRM as either "important" or "very important," underscoring the significance of sustainability initiatives within the organization.

2. Implementation of Green HRM Practices and HRIS Usage:

Approximately 80% of the respondents indicated that the organization has established Green HRM practices, such as eco-friendly recruitment, training, or performance appraisal processes. This reflects a proactive approach to aligning HR strategies with sustainability goals. Additionally, 83% of participants reported that the organization uses a Human Resource Information System (HRIS) for HR-related activities, indicating a significant reliance on technology to streamline HR processes.

3. Effectiveness of HRIS in Supporting Sustainability:

Among those who use HRIS (83%), a notable majority (71%) find it "effective" or "highly effective" in supporting sustainability initiatives. This showcases the potential of HRIS in facilitating data-driven decision-making for green HR practices.

4. Involvement in Sustainability Data Collection and Frequency:

Over 80% of respondents indicated involvement in the collection or analysis of sustainability-related data from the HRIS. This suggests that the organization recognizes the importance of data-driven insights for sustainable workforce management. Additionally, 75% reported that the HRIS provides sustainability-related data "frequently" or "always," indicating a proactive approach to tracking and reporting on environmental metrics.

5. Familiarity with AHP and ELECTRE, and Belief in Their Integration:

A significant proportion of participants (76% and 65% for AHP and ELECTRE, respectively) reported familiarity with these MCDM tools. Among those familiar, the majority (83%) expressed belief in the effectiveness of integrating AHP and ELECTRE to

enhance decision-making regarding sustainable HR practices. This positive perception indicates a readiness to embrace sophisticated decision-making techniques for sustainability-oriented choices.

6. Examples of Implementation, Challenges, and Suggestions:

Several respondents provided valuable examples of Green HRM implementation, such as the introduction of eco-friendly training programs, green recruitment strategies, and paperless onboarding processes. Common challenges highlighted include limited data integration between HRIS and sustainability initiatives, lack of clear criteria for sustainable decisions, and the need for more comprehensive sustainability metrics in the HRIS.

7. Use of AHP and ELECTRE in Decision-Making:

While this questionnaire did not directly assess the application of AHP and ELECTRE, respondents' positive familiarity with these tools and their belief in their effectiveness suggest a potential avenue for future research. The integration of AHP and ELECTRE could enhance the organization's decision-making process by systematically evaluating and prioritizing sustainability criteria, leading to more informed choices that align with both environmental objectives and organizational goals. The data analysis revealed a proactive organizational stance towards Green HRM, highlighted the importance of HRIS in supporting sustainability, and showcased a positive perception regarding the potential benefits of integrating AHP and ELECTRE. The results of this questionnaire provide a foundation for further exploration, suggesting that the integration of these tools can potentially lead to more sustainable HR decisions by considering a wide array of ecological, social, and economic factors. The next steps would involve a deeper examination of how AHP and ELECTRE can be applied within the Green HRM-HRIS framework to optimize sustainability outcomes.

Framework Explanation: Green HRM-HRIS Integration with AHP and ELECTRE:

In the pursuit of sustainable workforce management, the integration of Green Human Resource Management (Green HRM) with Human Resource Information Systems (HRIS) has emerged as a powerful approach. By leveraging the capabilities of both Green HRM and HRIS, organizations can align HR practices with sustainability objectives, leading to improved environmental performance and overall organizational success. However, to fully harness the potential of this integration, advanced decision-making tools are essential. In this context, the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE) have been identified as valuable Multi-Criteria Decision-Making (MCDM) tools.

AHP in the Green HRM-HRIS Context:

AHP offers a structured methodology for decision-making in complex, multi-criteria situations. Let's consider a hypothetical example where an organization is evaluating two different employee training programs aimed at enhancing environmental awareness.

The organization has identified three key criteria for evaluation: effectiveness of training, alignment with sustainability goals, and cost. Each criterion is assigned a weight to reflect its relative importance, as shown in the table below:

Criteria	Weight
Effectiveness of Training	0.5
Alignment with Sustainability Goals	0.3
Cost	0.2

The organization then evaluates each training program against these criteria, assigning scores based on expert opinions or data-driven analysis. For instance, Program A is rated higher in effectiveness, while Program B is more aligned with sustainability goals and is also less costly. Using AHP, the organization can calculate the overall score for each program, taking into account the criteria weights and individual scores. This systematic approach aids in objectively identifying the training program that best aligns with the organization's sustainability objectives while considering the trade-offs between criteria.

ELECTRE for Ranking Sustainable HR Practices:

ELECTRE, an outranking method, complements the AHP framework by considering multiple criteria with varying levels of importance. Let's extend our hypothetical example to rank different HR practices based on their sustainability impact. The organization has identified four HR practices: "Eco-Friendly Recruitment," "Telecommuting," "Paperless Onboarding," and "Green Performance Appraisal." Three criteria have been chosen for evaluation: ecological impact, employee engagement, and cost. Each criterion is assessed on a scale from 1 to 10, where a higher score indicates a better performance in that criterion.

Criteria	Weight
Ecological Impact	0.4
Employee Engagement	0.3
Cost	0.3

The organization then rates each HR practice against these criteria, and ELECTRE helps in ranking the practices by considering the outranking relationships between them. Let's say "Eco-Friendly Recruitment" has a higher ecological impact and employee engagement, while "Telecommuting" is more cost-effective. By applying ELECTRE, the organization can systematically compare these practices, considering both quantitative data and qualitative criteria, leading to a ranked list that aligns with the organization's sustainability priorities.

Conclusion: Unlocking Sustainable HRM with AHP and ELECTRE:

The integration of Green HRM with HRIS, supported by the structured decision-making capabilities of AHP and the nuanced ranking provided by ELECTRE, offers organizations

a powerful framework for sustainable workforce management. By assigning weights to criteria, evaluating options, and considering trade-offs, AHP aids in making informed decisions that align with sustainability goals. ELECTRE, on the other hand, factors in both quantitative and qualitative criteria, enabling organizations to rank different practices and strategies based on their holistic impact.

In the end, this integrated framework enables organizations to move beyond superficial green initiatives, making well-informed decisions that consider the broader ecological, social, and economic factors. By leveraging the synergies between Green HRM, HRIS, AHP, and ELECTRE, organizations can create a more sustainable work environment, enhance corporate social responsibility, and drive long-term success while making a positive impact on the environment.

Findings, Discussion, Limitations, and Recommendations:

Findings:

The integration of Green Human Resource Management (Green HRM) with Human Resource Information Systems (HRIS) has emerged as a promising approach to align HR practices with sustainability goals. Our data analysis unveiled several noteworthy findings that shed light on the effectiveness, challenges, and potential areas of improvement within this integrated framework.

Firstly, a significant majority of respondents were familiar with Green HRM, emphasizing the organization's awareness of the importance of environmental considerations in HR practices. This awareness, coupled with the adoption of Green HRM practices by the organization, demonstrates a proactive commitment to sustainability, which is crucial for fostering an environmentally responsible work culture.

Secondly, the effectiveness of HRIS in supporting sustainability initiatives was widely acknowledged among those who use it. The HRIS was perceived as a valuable tool for tracking and reporting sustainability-related data, indicating its role in data-driven decision-making for green HR practices.

The survey also revealed an encouraging belief among participants in the potential effectiveness of integrating Multi-Criteria Decision-Making (MCDM) tools, specifically the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE). Respondents recognized the value of these tools for enhancing the decision-making process regarding sustainable HR practices, particularly in systematically evaluating criteria and ranking options.

Discussion:

While the findings present a positive outlook on the integration of Green HRM with HRIS, along with the potential of AHP and ELECTRE, it is essential to discuss some challenges and areas for improvement.

One notable aspect is the need for more comprehensive sustainability metrics within the HRIS. Some respondents highlighted this as a challenge, indicating that the current data integration between HRIS and sustainability initiatives could be further improved. This underscores the importance of continuous development in HRIS capabilities to support sustainability data collection and analysis.

Furthermore, the survey uncovered the existence of challenges related to employee awareness and the lack of clear criteria for sustainable decisions. These challenges underscore the significance of effective communication strategies to promote awareness among employees about green initiatives and the need to develop well-defined criteria for evaluating sustainable HR practices.

Limitations:

While the findings provide valuable insights, it is essential to acknowledge certain limitations in this study. Firstly, the research is based on self-reported survey data from a specific organizational context. While efforts were made to ensure confidentiality and diversity in respondent roles, the findings may not be entirely generalizable to other organizations with different structures or industries.

Additionally, the study did not directly assess the application of AHP and ELECTRE in the organization's decision-making process, as it focused primarily on respondents' familiarity and beliefs regarding these tools. Future research should include practical implementations to fully understand the impact of these MCDM tools in the Green HRM-HRIS framework.

Recommendations:

Based on the findings and the discussions of challenges and limitations, several recommendations can be made to further enhance the integration of Green HRM with HRIS, and the application of AHP and ELECTRE:

1. **Enhance Sustainability Metrics in HRIS:** The organization should continue to invest in expanding the range of sustainability metrics captured within the HRIS. This can provide a more comprehensive view of environmental performance and assist in tracking progress toward sustainability goals.
2. **Promote Employee Awareness:** Developing effective communication strategies to raise employee awareness about green initiatives and their importance is crucial. Regular training and awareness campaigns can foster a more environmentally conscious workforce.
3. **Implement Clear Criteria for Sustainability:** The organization should establish clear and well-defined criteria for evaluating sustainable HR practices. This would enable a more consistent and objective decision-making process aligned with sustainability objectives.
4. **Explore Practical Applications of AHP and ELECTRE:** Building on the positive perception of AHP and ELECTRE, the organization should consider implementing these tools in real-world decision-making scenarios. This can provide valuable insights into their actual impact on selecting and ranking sustainable HR practices.

5. Continued Research: Conducting more in-depth research, possibly using case studies or controlled experiments, would help validate the effectiveness of the integrated framework in real organizational settings. Such research can provide a deeper understanding of the challenges and benefits, leading to continuous improvement.

Conclusion:

The integration of Green Human Resource Management (Green HRM) with Human Resource Information Systems (HRIS) represents a pivotal step towards fostering sustainability within organizations. Our research has unveiled a compelling framework that synergizes these essential elements, driven by a commitment to environmental responsibility and powered by advanced Multi-Criteria Decision-Making (MCDM) tools, specifically the Analytic Hierarchy Process (AHP) and Elimination Et Choix Traduisant la Réalité (ELECTRE).

Through our exploration, we discovered that the organization's strong familiarity with Green HRM signifies a collective recognition of the vital role environmental considerations play in contemporary HR practices. This awareness is complemented by the adoption of Green HRM practices, reflecting a proactive stance towards sustainability and employee well-being. Moreover, the effectiveness of HRIS in supporting sustainability initiatives has been validated by those who utilize it, highlighting the instrumental role of technology in data-driven decision-making.

The findings, discussions, and recommendations have illuminated key pathways to further enhance this integrated framework. While the current HRIS capabilities are commendable, there is room for expanding sustainability metrics, thereby providing a more holistic view of the organization's ecological performance. The promotion of employee awareness, the establishment of transparent criteria for evaluating sustainable practices, and the practical implementation of AHP and ELECTRE represent strategic moves towards achieving both environmental and organizational objectives.

However, our study also acknowledged certain limitations, particularly the context-specific nature of the data collected and the absence of direct practical implementations of AHP and ELECTRE in organizational decision-making. These limitations underscore the need for continuous research, encompassing diverse organizational settings, and real-world applications to validate the potential impact of this framework.

In closing, the integrated framework of Green HRM, HRIS, AHP, and ELECTRE stands as a beacon for organizations aiming to not only excel in sustainability but also thrive in the modern business landscape where environmental concerns increasingly shape stakeholder expectations. By fostering an environment that values ecological consciousness, aligns HR practices with sustainability goals, and leverages advanced decision-making techniques, organizations can navigate the challenges of the 21st century with confidence, contributing positively to the environment while realizing long-term success. As we move forward, this integrated approach has the potential to set new industry standards for holistic workforce management that reflects the values of both the organization and the global community.

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9. Innovation Unleashed: Navigating the Landscape of Disruptive Entrepreneurship and Corporate Innovation

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Abstract:

"Innovation Unleashed: Navigating the Landscape of Disruptive Entrepreneurship and Corporate Innovation" offers a comprehensive exploration of innovation and entrepreneurship in today's rapidly evolving world. From understanding the foundations of innovation to grappling with ethical considerations and future trends, this book provides insights, strategies, and case studies for both aspiring entrepreneurs and established companies. The ten chapters cover diverse topics, including disruptive innovations, venture capital, intrapreneurship, collaborative ecosystems, and sustainable growth.

By dissecting the challenges and benefits of innovation, readers gain a deeper understanding of its potential impact on industries and society. With a focus on fostering a culture of change, the book emphasizes the importance of diverse perspectives, responsible practices, and the continuous pursuit of innovative solutions. The concluding chapter empowers readers to embrace a mindset of continuous adaptation, inspiring the next generation of entrepreneurs to drive positive change.

Keywords:

Innovation, entrepreneurship, disruptive innovations, intrapreneurship, venture capital, collaborative ecosystems.

1.1 Introduction:

In today's rapidly changing global landscape, innovation and entrepreneurship have emerged as key drivers of economic growth, social progress, and technological advancement. The interplay between disruptive innovations and corporate adaptation has transformed industries, prompting the need for a comprehensive understanding of these phenomena. "Innovation Unleashed: Navigating the Landscape of Disruptive Entrepreneurship and Corporate Innovation" aims to provide a deep exploration of the intricate dynamics that define the realms of innovation and entrepreneurship.

1.2 Review of Literature:

Numerous scholars and experts have explored the dimensions of innovation and entrepreneurship, delving into their profound impacts on economies, industries, and societies. The literature underscores the role of innovation in propelling economic growth and competitiveness. The Innovator's Dilemma, as highlighted by Christensen (1997), underscores the challenges established companies face when confronted by disruptive innovations. Various frameworks, such as Lean Start-up and Design Thinking, have been proposed to guide the start-up journey from ideation to market entry. The growth of venture capital as a funding source for start-ups and its catalytic effect on entrepreneurial ecosystems have been widely analyzed. The concepts of corporate innovation and intrapreneurship have gained prominence, with case studies illustrating successful implementation strategies. Ethical considerations, sustainability, and diversity in innovation have also gained scholarly attention. Moreover, insights into future trends and the role of education and policy in nurturing innovation ecosystems have been explored.

1.3 Objectives:

The primary objectives of this book are to:

1. Provide a comprehensive understanding of innovation and entrepreneurship in the context of economic growth and societal change.
2. Analyze the dynamics of disruptive innovations and their influence on established industries, leveraging case studies for insights.
3. Offer insights into the start-up journey, from idea conception to securing funding, using practical frameworks and real-world examples.
4. Examine the pivotal role of venture capital in fostering innovation, exploring its various forms and evaluating its benefits and challenges.
5. Investigate the nuances of corporate innovation and intrapreneurship, offering strategies to cultivate cultures of change and drive internal innovation.
6. Explore diverse idea generation techniques and collaborative innovation ecosystems, emphasizing cross-functional teams and open innovation models.
7. Examine the challenges and strategies associated with scaling innovation, balancing growth with operational efficiency, and learning from unicorn companies.
8. Address the ethical, social, and environmental implications of innovation, advocating for responsible and inclusive entrepreneurial practices.
9. Forecast future trends in innovation and entrepreneurship, touching on technological disruptions, the evolution of venture capital, and corporate adaptation.
10. Conclude by summarizing key learnings and inspiring the next generation of entrepreneurs to embrace a culture of continuous innovation for positive change.

1.4 Methodology:

This book adopts a multidisciplinary approach, drawing insights from economics, business management, sociology, and technology studies. It leverages a combination of case studies, empirical research, industry reports, and expert opinions to provide a holistic perspective

on innovation and entrepreneurship. Real-world examples and practical strategies are interwoven to enhance readers' comprehension and applicability.

1.5 Analysis and Findings:

The analysis presented in this book unveils the intricate dynamics of innovation and entrepreneurship. It highlights the disruptive potential of innovations and the challenges established companies face in adapting to change. The start-up journey is deconstructed, offering practical guidance for aspiring entrepreneurs. Venture capital's catalytic role in innovation is explored, alongside the emergence of corporate innovation and intrapreneurship as vital components of organizational growth. The significance of collaborative innovation ecosystems, ethical considerations, and the role of diversity in fostering innovation are thoroughly examined. Future trends are anticipated, emphasizing the transformative impact of emerging technologies and the importance of adaptive corporate strategies.

1.6 Interpretation:

"Innovation Unleashed" presents a comprehensive exploration of innovation and entrepreneurship, delving into their multifaceted dimensions. It underscores the pivotal role of innovation in driving economic growth and societal change. The interplay between disruptive innovations, corporate adaptation, and the start-up journey is illuminated through real-world case studies and practical strategies. The book discusses the vital role of venture capital, corporate innovation, and intrapreneurship in fostering dynamic entrepreneurial ecosystems. Ethical considerations, sustainability, and diversity are integrated into the narrative, fostering responsible and inclusive innovation. Future trends are projected, and the transformative potential of emerging technologies is underscored. The conclusion summarizes key insights, advocating for a culture of continuous innovation and inspiring the next generation of entrepreneurs to drive positive change in an ever-evolving landscape. This book aspires to empower readers with a comprehensive understanding of the innovation and entrepreneurship landscape, equipping them with insights, strategies, and inspiration to navigate and thrive in an era of transformative change.

I. Introduction to Innovation and Entrepreneurship:

Understanding Innovation and Entrepreneurship:

Innovation and entrepreneurship are two intertwined concepts that play a vital role in shaping economies, industries, and societies. Innovation refers to the process of creating and implementing new ideas, products, services, or business models that result in significant improvements or advancements. Entrepreneurship, on the other hand, involves the identification and exploitation of opportunities to create and build new ventures. It's the driving force behind turning innovative ideas into tangible, market-ready solutions. At the heart of innovation and entrepreneurship lies creativity and problem-solving. Entrepreneurs identify unmet needs, gaps, or challenges in the market and then work on innovative solutions to address them. This can range from developing groundbreaking technologies to devising unique ways of delivering existing services more effectively.

The Role of Innovation in Driving Economic Growth:

Innovation is a key driver of economic growth and competitiveness. When individuals and organizations innovate, they introduce new products and services that not only generate revenue but also create jobs and spur economic activity. Innovative industries often attract investments, both domestic and foreign, leading to the growth of entire ecosystems around them. Furthermore, innovation leads to improvements in productivity. As companies adopt more efficient processes, they can produce more output with fewer resources. This enhanced productivity can translate into higher profits, better quality products, and ultimately improved living standards.

Innovation also fosters international trade and global connectivity. Cutting-edge products and services can find markets beyond borders, increasing exports and enriching the overall economic landscape.

Entrepreneurship as a Catalyst for Change:

Entrepreneurship is a force that propels change and disruption. Entrepreneurs identify opportunities in the market and pursue them with enthusiasm, often challenging established norms and practices. Through their ventures, entrepreneurs can introduce new business models, technologies, and ways of thinking that shake up industries and push them forward.

Entrepreneurs exhibit traits such as risk-taking, resilience, and adaptability. They are willing to take calculated risks in pursuit of their goals, often stepping into uncharted territory where the outcome is uncertain. This willingness to embrace risk can lead to groundbreaking innovations and significant transformations.

Furthermore, entrepreneurship encourages competition and diversity. New entrants into markets introduce fresh perspectives and solutions, fostering healthy competition that benefits consumers. Additionally, entrepreneurship can empower individuals from diverse backgrounds and communities, contributing to social mobility and economic inclusivity.

In conclusion, the intertwined nature of innovation and entrepreneurship underscores their importance in driving progress and change. These concepts are not only central to economic growth but also to societal advancement.

The subsequent chapters of this book will delve deeper into the various facets of these topics, exploring how disruptive innovations reshape industries, how start-ups navigate the entrepreneurial landscape, how corporate innovation is fostered, and how ideas are generated to fuel this dynamic ecosystem.

II. Disruptive Innovations: Reshaping Established Industries:

Defining Disruptive Innovations and Their Characteristics:

Disruptive innovations are transformative changes that revolutionize industries by introducing new products, services, or business models that often start at the low end of the

market and eventually challenge and replace established products or services. These innovations tend to offer simpler, more accessible, and cost-effective alternatives that cater to underserved or overlooked segments of the market. Characteristics of disruptive innovations include:

- **Lower Performance:** Initially, disruptive innovations may have lower performance compared to existing solutions, but they improve rapidly over time.
- **Simplicity:** Disruptive products often offer fewer features, making them more accessible to a broader audience.
- **Affordability:** They are often priced lower than existing solutions, appealing to price-sensitive consumers.
- **New Market Entrants:** Disruptive innovations often emerge from new entrants rather than established players.
- **Niche Focus:** They target niche markets or underserved segments that larger companies might neglect.

Case Studies of Iconic Disruptions: Lessons from Netflix, Uber, and Airbnb:

Examining real-world examples helps illustrate the impact of disruptive innovations on established industries:

- **Netflix:** Started as a DVD rental-by-mail service and later transitioned to streaming, disrupting the traditional video rental and television industries.
- **Uber:** Introduced a ride-hailing platform that transformed the transportation industry, challenging traditional taxis.
- **Airbnb:** Created a peer-to-peer lodging marketplace, disrupting the hotel industry and changing the way people travel and find accommodations.

These case studies demonstrate how innovative ideas can lead to the creation of entirely new market dynamics, often at the expense of established players who fail to adapt.

The Innovator's Dilemma: Why Established Companies Struggle with Disruption:

The Innovator's Dilemma, coined by Clayton Christensen, highlights why well-established companies can struggle with disruptive innovations. Established companies tend to focus on improving their existing products or services for their mainstream customers, leaving them vulnerable to disruption. They often overlook emerging technologies or market segments that initially seem less profitable but have the potential to disrupt their core business in the future.

Strategies for Established Companies to Respond to Disruptive Threats:

Established companies can take proactive steps to respond to disruptive threats:

- **Innovate Internally:** Allocate resources to internal innovation units that focus on exploring new opportunities and experimenting with disruptive ideas.

- **Acquire or Partner:** Acquire or form strategic partnerships with start-ups that are leading the disruptive charge.
- **Separate Business Units:** Create separate business units that can explore and develop disruptive innovations independently from the core business.
- **Cultivate a Culture of Innovation:** Foster a culture that encourages employees to think creatively, experiment, and embrace change.

In summary, disruptive innovations reshape industries by challenging the status quo and creating new paradigms. Understanding their characteristics, learning from case studies, recognizing the Innovator's Dilemma, and implementing strategic responses are crucial for both start-ups and established companies to navigate the landscape of disruptive innovations effectively. This chapter serves as a foundation for understanding the dynamic interplay between innovation and industry transformation.

III. The Start-up Journey: From Idea to Venture:

The Genesis of Start-up Ideas: Identifying Market Gaps and Opportunities:

Start-up ideas often emerge from recognizing unmet needs or problems within the market. This could be a result of identifying pain points that customers experience or recognizing trends that indicate potential demand for a new solution. Entrepreneurs can explore various sources for inspiration, including personal experiences, industry insights, customer feedback, and emerging technologies.

Developing a Viable Business Model: Lean Start-up and Design Thinking Approaches:

Creating a viable business model is crucial for turning a start-up idea into a sustainable venture. The lean start-up methodology emphasizes rapid experimentation and iteration to validate assumptions and refine the business model. Design thinking encourages empathetic understanding of user needs and iterative prototyping to develop solutions that truly resonate with customers. These approaches help entrepreneurs avoid building elaborate products before understanding whether there's real demand.

Crafting a Compelling Value Proposition: Addressing Customer Pain Points:

A strong value proposition is at the heart of a successful start-up. It communicates the unique benefits a product or service offers to customers, particularly in addressing their pain points or challenges. Entrepreneurs need to clearly articulate how their solution solves a specific problem better than existing alternatives. Effective value propositions resonate with the target audience and form the basis for marketing and sales efforts.

Securing Funding: Navigating the World of Venture Capital and Angel Investors:

Securing funding is a critical step in the start-up journey. Venture capital (VC) and angel investors provide financial support in exchange for equity in the company. To attract investors, entrepreneurs need to create a compelling pitch that demonstrates the potential market opportunity, the value of the solution, the business model, and the team's capability.

Networking, attending pitch events, and using online platforms can help connect start-ups with potential investors. In addition to VC and angel investment, other funding sources include bootstrapping (self-funding), crowdfunding, grants, and incubator/accelerator programs.

The Start-up Journey: From Idea to Venture takes readers through the foundational steps of building a start-up, from ideation to securing funding. By identifying market gaps, honing the business model, crafting a compelling value proposition, and navigating the world of investment, entrepreneurs can set a strong foundation for their start-up venture. This chapter equips readers with insights and practical strategies to effectively navigate the complex landscape of entrepreneurship.

IV. Venture Capital and its Impact on Innovation:

Understanding Venture Capital: Types, Stages, and Funding Rounds:

Venture capital (VC) is a form of financing provided to start-ups and early-stage companies with high growth potential. It involves investors providing capital in exchange for equity in the company. Different stages of a start-up's growth often correspond to different funding rounds, such as seed, Series A, Series B, and beyond. These rounds help start-ups secure the necessary resources for development, scaling, and market expansion.

- Seed Stage: Initial funding to develop a prototype or proof of concept.
- Series A: Funding to refine the product, build a customer base, and achieve growth.
- Series B and Beyond: Funding for further scaling, market expansion, and increasing market share.

The Role of Venture Capital in Fostering Entrepreneurial Ecosystems:

Venture capital plays a pivotal role in fostering entrepreneurial ecosystems. It provides not only financial capital but also expertise, mentorship, and networks. VC firms often have experienced professionals who can guide start-ups in areas like business strategy, operations, and market positioning. Moreover, successful start-up exits (through acquisitions or initial public offerings) generate returns for investors, encouraging further investments in the ecosystem.

Evaluating Start-ups: Metrics and Criteria for Investment:

VC investors evaluate start-ups using a combination of quantitative and qualitative criteria:

- Market Potential: The size and growth potential of the target market.
- Team: The experience, skills, and cohesion of the founding team.
- Product/Technology: The uniqueness and value proposition of the product or technology.
- Traction: Evidence of customer interest, user adoption, and revenue growth.
- Competitive Landscape: Understanding of competitors and differentiation.
- Business Model: Viability and scalability of the business model.

Challenges and Benefits of Venture Capital Funding for Start-ups:

Venture capital funding can be both beneficial and challenging for start-ups:

- Benefits

- **Financial Resources:** Provides capital for product development, scaling, and operations.
- **Expertise:** Access to experienced investors who can provide strategic guidance.
- **Network:** Connections to industry partners, potential customers, and mentors.
- **Validation:** VC backing can boost credibility and attract further investors.

- Challenges

- **Equity Dilution:** VC funding entails giving up a portion of ownership.
- **High Expectations:** VC investors expect significant returns, putting pressure on growth.
- **Decision-making:** Balancing investors' opinions with the company's vision.
- **Exit Pressure:** The need to achieve successful exits to provide returns to investors.

Venture Capital and its Impact on Innovation delves into the critical role that venture capital plays in nurturing innovation and supporting start-ups. By understanding the types of VC funding, its role in the entrepreneurial ecosystem, evaluation criteria, and the pros and cons of VC funding, readers gain insights into how venture capital contributes to driving innovation and shaping the landscape of emerging technologies and industries.

V. Corporate Innovation and the Rise of Intrapreneurship:

- **Corporate Innovation: Cultivating a Culture of Change and Experimentation:** Corporate innovation refers to the deliberate efforts of established companies to introduce new ideas, products, processes, or business models in order to stay competitive and adapt to changing markets. Cultivating a culture of innovation involves creating an environment where experimentation, risk-taking, and creativity are encouraged. This can involve rethinking traditional hierarchies and fostering open communication channels to capture ideas from employees at all levels.
- **Intrapreneurship: Empowering Employees to Drive Internal Innovation:** Intrapreneurship involves employees acting as entrepreneurs within a larger organization. Intrapreneurs are empowered to identify new opportunities, develop innovative solutions, and take calculated risks. Encouraging intrapreneurship can lead to breakthrough ideas, enhance employee engagement, and drive organizational growth. Providing resources, autonomy, and recognition to intrapreneurs is key to fostering their creativity.
- **Case Studies of Successful Intrapreneurship Programs: Google's 20% Time and 3M's Innovation Boot Camp:** - **Google's 20% Time:** Google famously encourages employees to spend 20% of their work time on projects of their own choosing. This policy has led to innovations such as Gmail and Google News. - **3M's Innovation Boot Camp:** 3M holds regular boot camps where employees from different departments collaborate on innovative projects. This cross-functional approach has led to the creation of numerous successful products. These case studies showcase how companies can leverage intrapreneurship to generate fresh ideas and drive innovation within their existing structures.

- **Overcoming Resistance to Change: Aligning Corporate Structure with Innovation Goals:** Established companies often face resistance to change due to existing processes, hierarchies, and risk aversion. Overcoming this resistance involves aligning the corporate structure with innovation goals. This might include creating dedicated innovation teams, establishing innovation hubs, and providing resources specifically for experimentation. Additionally, leadership commitment to innovation and transparent communication about the importance of change can help overcome resistance.
- **Corporate Innovation and the Rise of Intrapreneurship** dives into the world of corporate innovation, intrapreneurship, and the importance of fostering an environment where employees can drive change from within. By exploring successful case studies, understanding the role of intrapreneurs, and learning strategies to overcome resistance, readers gain insights into how large organizations can adapt, innovate, and stay relevant in today's rapidly evolving business landscape.

Idea Generation Techniques for Innovation:

- **The Importance of Idea Generation in Nurturing Innovation:** Idea generation is the cornerstone of innovation. It involves systematically exploring new concepts and solutions to address challenges or capitalize on opportunities. Nurturing a culture of continuous idea generation is vital for staying ahead in a competitive landscape. It encourages employees to think creatively, contribute to problem-solving, and drive the evolution of products, services, and processes.
- **Brainstorming Techniques: Traditional, Reverse, and Brainwriting:** - **Traditional Brainstorming:** A group technique where participants openly suggest ideas without criticism. The aim is to generate a large volume of ideas in a short time. Instead of generating solutions, participants focus on identifying ways to create or exacerbate a problem. This can lead to novel insights and innovative problem-solving. A written form of brainstorming, where participants jot down their ideas on paper. These ideas are then passed around the group for further development and refinement.
- **Hackathons and Innovation Challenges: Engaging Employees in Problem-Solving:** Hackathons and innovation challenges are time-bound events that gather employees to collaboratively tackle specific problems or explore new opportunities. These events foster creativity, cross-functional collaboration, and rapid idea prototyping. They often result in novel solutions and prototypes that can be further developed into innovative projects.
- **Design Sprints: Rapid Prototyping and Iterative Idea Refinement:** Design sprints are structured workshops that guide participants through a process of rapid idea prototyping and validation. Typically spanning a few days, design sprints involve problem definition, ideation, prototyping, testing, and iteration. This approach ensures that solutions are tested and refined quickly, minimizing the risk of investing resources in ideas that don't resonate with users.

Idea generation techniques are essential for organizations aiming to remain innovative and adaptive.

They encourage the exploration of diverse ideas and perspectives, leading to breakthrough innovations that can transform industries and markets.

- **Idea Generation Techniques for Innovation** provides readers with a toolkit of creative methods for generating innovative ideas. By understanding and implementing these techniques, individuals and organizations can foster a culture of continuous idea generation and problem-solving, driving innovation at all levels of the business.

Fostering Collaborative Innovation Ecosystems:

- **Building Cross-Functional Teams: Diverse Perspectives for Creative Solutions:** Cross-functional teams bring together individuals from different disciplines, backgrounds, and expertise areas to work collaboratively on projects. This diversity of perspectives sparks creativity and leads to more comprehensive problem-solving. Each team member brings unique insights that contribute to holistic and innovative solutions. Effective cross-functional collaboration requires strong communication, mutual respect, and a shared sense of purpose.
- **Open Innovation: Collaborating with External Partners, Customers, and Start-ups:** Open innovation involves seeking external ideas and expertise to enhance internal innovation efforts. This can include partnering with customers, suppliers, research institutions, and even start-ups. Collaborations can range from joint R&D projects to co-creating solutions with customers. By tapping into external resources, companies can access a broader pool of knowledge, accelerate innovation, and create mutually beneficial partnerships.
- **Innovation Hubs and Incubators: Nurturing Innovation within and Beyond Corporate Walls:** Innovation hubs, accelerators, and incubators are physical or virtual spaces designed to foster innovation and support start-ups. These environments provide access to resources, mentorship, networking opportunities, and funding. They also encourage collaboration and knowledge-sharing among start-ups, entrepreneurs, and established companies. For larger corporations, establishing internal innovation hubs can encourage employees to engage in creative problem-solving and intrapreneurship.
- **Intellectual Property Protection: Balancing Innovation and Legal Considerations:** Innovation often involves the creation of intellectual property (IP), such as patents, copyrights, and trademarks. Balancing the need for innovation with legal considerations is crucial. Companies need to protect their innovative ideas while also respecting the IP rights of others. Strategies include conducting thorough IP searches, filing patents, and implementing IP policies that encourage responsible innovation.
- **Fostering Collaborative Innovation Ecosystems** explores how organizations can create environments that facilitate collaboration, idea exchange, and innovation. By building cross-functional teams, embracing open innovation practices, nurturing innovation hubs, and addressing intellectual property considerations, companies can foster a dynamic ecosystem that supports both internal and external innovation. This chapter provides insights into leveraging the collective intelligence of diverse stakeholders to drive meaningful and sustainable innovation.

Scaling Innovation and Sustaining Growth:

- **Transitioning from Start-up to Scale-up: Challenges and Strategies:** As a start-up grows and gains market traction, it transitions into the scale-up phase. This phase comes with its own set of challenges, including managing increased demand, building

infrastructure, and securing additional funding. Strategies for successful scaling include streamlining operations, optimizing processes, hiring a skilled team, and expanding the customer base while maintaining the essence of the innovation that drove the start-up's success.

- **Managing Rapid Growth: Maintaining Innovation Amidst Expansion:** Rapid growth can strain resources and lead to a focus on operational efficiency rather than innovation. However, maintaining a culture of innovation is vital even during expansion. This involves creating processes that balance the need for scaling with the need for creativity. Setting aside dedicated time or resources for innovation, even as the company grows, ensures that the spark of innovation remains alive.
- **Balancing Innovation with Operational Efficiency: The Scale-up Dilemma:** The tension between innovation and operational efficiency is known as the scale-up dilemma. Scaling often requires standardization and optimization to handle increased demand, while innovation thrives on experimentation and risk-taking. Striking the right balance involves creating structures that allow for both innovative thinking and efficient execution.
- **Lessons from Unicorn Companies: Scaling Innovations that Revolutionize Industries:** Unicorn companies are start-ups that reach a valuation of \$1 billion or more. These companies have successfully scaled their innovations to disrupt industries and create significant value. Learning from the experiences of unicorn companies can provide insights into how to navigate the challenges of scaling while maintaining innovative momentum. Examples like Uber, Airbnb, and SpaceX offer valuable lessons in driving innovation at scale.
- **Scaling Innovation and Sustaining Growth:** explores the critical phase of transitioning from a start-up to a scale-up. By addressing the challenges and strategies of this phase, managing growth while fostering innovation, and learning from the successes of unicorn companies, readers gain insights into how to navigate the complexities of scaling while preserving the innovative spirit that led to their initial success. This chapter equips entrepreneurs and business leaders with strategies to ensure that innovation continues to thrive even as their ventures grow.

Ethical and Social Implications of Innovation:

- **Innovation's Impact on Society: The Good and the Unintended Consequences:** Innovation brings about both positive changes and unintended consequences for society. Positive impacts include improved quality of life, enhanced communication, and advancements in healthcare. However, there can be negative consequences, such as job displacement due to automation, ethical concerns with emerging technologies, and potential threats to privacy. Understanding and addressing these implications is crucial to ensure that innovation benefits society as a whole.
- **Ethical Dilemmas in Entrepreneurship: Balancing Profit and Responsibility:** Entrepreneurs often face ethical dilemmas when making business decisions. Balancing profit motives with ethical responsibilities can be challenging. Examples include decisions related to labor practices, environmental impact, data privacy, and fair competition. Entrepreneurs need to consider not only their financial success but also the broader societal impact of their ventures.

- **Sustainability and Corporate Social Responsibility in Innovation:** Sustainability and corporate social responsibility (CSR) involve integrating ethical and responsible practices into business operations. Innovations that prioritize environmental sustainability, ethical sourcing, and community engagement can have positive long-term impacts. Embracing CSR can enhance brand reputation, attract socially conscious customers, and contribute to the well-being of the communities where businesses operate.
- **Ensuring Diversity and Inclusion in Innovation and Entrepreneurship:** Diversity and inclusion are essential for fostering creativity and innovation. Different perspectives and backgrounds can lead to more comprehensive problem-solving and innovative solutions. Encouraging diversity in hiring, decision-making, and collaboration ensures that a wide range of voices contribute to the innovation process. This chapter explores strategies to create inclusive environments where everyone has the opportunity to participate and contribute.
- **Ethical and Social Implications of Innovation** delves into the ethical responsibilities that come with innovation and entrepreneurship. By addressing the impact of innovation on society, navigating ethical dilemmas, embracing sustainability and corporate social responsibility, and promoting diversity and inclusion, entrepreneurs and business leaders can ensure that their innovations contribute positively to society while upholding ethical values. This chapter emphasizes the importance of holistic thinking that extends beyond profit to consider the broader implications of innovation on people and the planet.

Future Trends in Innovation and Entrepreneurship:

- **Technological Disruptions on the Horizon: AI, Blockchain, Biotech, and More:** The future of innovation is shaped by emerging technologies. Artificial intelligence (AI), blockchain, biotechnology, quantum computing, and renewable energy are among the disruptive forces poised to transform industries. These technologies hold the potential to revolutionize how we work, communicate, and live. Understanding their capabilities and potential applications enables entrepreneurs to position themselves at the forefront of innovation.
- **The Evolution of Venture Capital: Shaping the Next Generation of Start-ups:** Venture capital is evolving in response to changing innovation landscapes. Trends like impact investing (investing for both financial returns and social/environmental impact), corporate venture capital (investments by established companies in start-ups), and crowdfunding are reshaping the funding landscape for start-ups. Entrepreneurs need to stay informed about these changes to secure the necessary funding for their ventures.
- **Corporate Adaptation: Anticipating Challenges and Opportunities in the Innovation Landscape:** Established companies must continually adapt to remain competitive in the face of disruptive innovations. Anticipating challenges such as changing consumer preferences, evolving technology, and regulatory shifts is essential. Companies that proactively embrace innovation, pivot their business models, and invest in research and development are more likely to thrive in a rapidly changing landscape.
- **The Role of Education and Policy in Nurturing Innovation Ecosystems:** Education and policy play a crucial role in nurturing innovation ecosystems. Entrepreneurial education and programs in schools and universities encourage the next generation to

think creatively and pursue entrepreneurial endeavors. Governments can shape innovation landscapes through supportive policies, tax incentives, and research funding. Collaborative efforts between academia, industry, and government create environments where innovation can flourish.

- **Future Trends in Innovation and Entrepreneurship** provides insights into the forward-looking aspects of innovation and entrepreneurship. By exploring technological disruptions, the evolving nature of venture capital, corporate adaptation strategies, and the role of education and policy in nurturing innovation ecosystems, readers gain a glimpse into what the future holds for innovators and business leaders. This chapter emphasizes the importance of staying agile and adaptable in an era of rapid technological and societal changes.

1.7 Conclusion: Empowering the Innovators of Tomorrow:

- **Recap of Key Learnings from Disruptive Innovations to Corporate Intrapreneurship:** The journey through the various facets of innovation and entrepreneurship has highlighted key principles and strategies. From understanding disruptive innovations that reshape industries to fostering corporate intrapreneurship, each topic underscores the importance of agility, creativity, and adaptability. Recap the essential takeaways from each chapter, emphasizing the interconnectedness of these concepts and the role they play in driving progress.
- **Embracing a Mindset of Continuous Innovation and Adaptation:** Innovation is not a one-time endeavor but a continuous process. Embracing a mindset of innovation involves staying curious, open to new ideas, and willing to challenge the status quo. Adaptation is essential in a rapidly changing world, where disruptions are the norm. Cultivating a culture that encourages experimentation, risk-taking, and learning from failures fosters an environment where innovation can thrive.
- **Inspiring the Next Generation of Entrepreneurs to Drive Positive Change:** The future of innovation lies in the hands of the next generation of entrepreneurs. By embracing the lessons from the past and present, they can shape the landscape of industries, technologies, and societies. Encourage aspiring entrepreneurs to dream big, take calculated risks, and tackle global challenges with innovative solutions. Inspire them to create businesses that not only drive economic growth but also contribute positively to the world.

In conclusion, "**Empowering the Innovators of Tomorrow**" wraps up the journey through the world of innovation and entrepreneurship. By recapping key learnings, emphasizing the importance of continuous innovation and adaptation, and inspiring the next generation, this chapter leaves readers with a sense of purpose and a call to action. It encourages individuals to become agents of change, harnessing their creativity and determination to shape a brighter and more innovative future.

10. Innovation Via Social & Thoughtful Entrepreneurship

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Abstract:

In today's complex and rapidly evolving world, addressing pressing social and environmental challenges requires innovative and purpose-driven approaches. This research paper seeks to delve into the interplay between Social & Thoughtful Entrepreneurship and the pivotal role of innovation in fostering positive societal transformation. The study comprises three interconnected objectives that collectively contribute to a comprehensive understanding of the dynamic relationship between entrepreneurship, innovation, and social impact.

Through in-depth analysis of case studies and empirical evidence, we aim to demonstrate how innovation acts as a catalyst for meaningful change, enabling entrepreneurs to devise creative solutions that resonate with the needs of diverse communities. By engaging with practitioners, we aim to identify barriers that hinder the effective integration of innovation for social and ethical entrepreneurship. Through qualitative analysis, we explore how factors such as resource limitations, regulatory environments, and resistance to change impact the adoption and implementation of innovative approaches. Through a synergistic exploration of the three objectives, this research paper contributes to the discourse on Social & Thoughtful Entrepreneurship and its relationship with innovation.

Introduction:

In a rapidly evolving world characterized by complex societal and environmental challenges, the intersection of entrepreneurship, innovation, and social responsibility has emerged as a powerful force for positive change. This confluence of ideals has given rise to a transformative paradigm known as Social & Thoughtful Entrepreneurship, which seeks to address pressing global issues through purpose-driven business ventures fuelled by innovation. This research paper delves into the multifaceted landscape of Social &

Thoughtful Entrepreneurship, with a particular emphasis on the role of innovation in driving positive societal transformation. The concept of entrepreneurship has undergone a profound evolution, extending beyond mere profit generation to encompass wider social and ethical considerations. Social & Thoughtful Entrepreneurship represents a dynamic departure from traditional business models by integrating principles of empathy, sustainability, and community engagement.

Rooted in the conviction that businesses can serve as catalysts for meaningful change, this paradigm underscores the importance of aligning entrepreneurial endeavours with societal well-being. It involves ventures that not only seek economic viability but also actively contribute to addressing societal challenges, from environmental degradation to inequality and beyond. Innovation has emerged as a driving force behind the progress of societies and the resolution of complex global issues. These innovations are not only about technological advancement; they also involve novel business models, collaboration with diverse stakeholders, and adaptive problem-solving.

Through in-depth examination and analysis, this paper seeks to uncover how these innovative practices are instrumental in bringing about positive and sustainable societal transformation. While the promise of innovation in Social & Thoughtful Entrepreneurship is immense, it is not without its challenges.

This paper acknowledges that social entrepreneurs navigating the landscape of innovation encounter unique obstacles that warrant exploration. These challenges may encompass financial constraints, regulatory barriers, ethical dilemmas, and the tension between profitability and impact. By understanding these challenges, stakeholders can develop strategies to empower and support social entrepreneurs in their pursuit of innovation-driven positive change.

Research Gap:

Existing research tends to focus on either social entrepreneurship or ethical entrepreneurship separately, without necessarily integrating the two concepts into a coherent framework. This research gap highlights the need for a more robust and holistic conceptualization that elucidates the intersection of social and ethical aspects within entrepreneurship, paving the way for a better understanding of how these elements can be synergistically harnessed for positive impact.

Addressing this gap would involve delving deeper into the mechanisms by which innovation catalyzes meaningful change within communities and societies, providing insights into the unique pathways through which innovation leads to positive societal outcomes.

Existing literature might touch on challenges faced by entrepreneurs in general, but the unique dynamics of integrating innovation with a focus on social and ethical impact remain understudied. Exploring this gap could provide insights into potential barriers that may hinder the successful implementation of innovative solutions in the context of social and ethical entrepreneurship, aiding in the formulation of strategies to overcome these obstacles.

Objectives:

1. To Conceptualize Social & Thoughtful Entrepreneurship
2. To explore the Role of Innovation on positive societal transformation.
3. To study the challenges and constraints social entrepreneurs face when they use innovation for social and ethical entrepreneurship.

Literature Review:

Schaltegger and Wagner (2011) explore the idea of both social enterprise and social entrepreneurship have their roots in the nonprofit sector, they both tend to restrict their purview to NGOs and either tacitly or explicitly exclude public and for-profit organizations.

Although academics have made earnest attempts to widen accepted notions of social enterprise and entrepreneurship, their work has had little impact on the make-up of affinity groups and funding decisions.

Austin, Stevenson, and Wei-Skillern (2006) examine how businesses are crucial because they produce innovation. But in the end, social value is produced by innovation. Innovation can come from people and locations that are not often associated with social entrepreneurship or social enterprise. Large, well-established charities, corporations, and even governments in particular are creating social innovations.

Hota et al. 2019, Zahra et al. 2014, Short et al. 2009, McQuilten 2017 states the body of literature is sufficient proof that during the past 20 years, there have been more SE researchers and publications.

The existence of numerous previously researched study themes was validated by a survey of the existing literature on SE. Research articles on the social impact of SE have significantly increased recently (Nguyen et al. 2015), as have articles on social entrepreneur innovations (Rao-Nicholson et al. 2017; Miremadi 2014), SE business strategies and business models (George and Reed 2016; Roy and Karna 2015), as well as SE value creation and value dissemination.

Mulgan, Tucker, Ali, and Sanders (2007) states an in-depth analysis of these studies reveals that existing review studies either concentrate on particular SE aspects or offer a comprehensive overview of SE research as a field of study. There aren't many literature reviews that categorize current SE research into themes based on study topics, which would suggest future research directions in light of the in-depth analysis of each theme.

Phills Jr, Deiglmeier, and Miller (2008) state the first criterion is novelty: innovations need not be original, but they must be new to the user, context, or application. The second criterion is improvement: to be considered an innovation, a process or outcome must be either more effective or more efficient than preexisting alternatives. We can also add more sustainable or more just to this list of improvements.

Sahay, Singh, and Medury (2008) seek to understand the relationship between business excellence frameworks and persistent competitive advantage. The study focuses on the tactical usage of business excellence models for creating long-term competitive advantage and continuous development.

It offers understanding into the ways in which business excellence approaches support the endurance and effectiveness of organizations.

Research Methodology:

We collected data from a diverse range of sources, including academic literature, case studies, and reports from social entrepreneurship organizations. The data encompassed examples of successful Social & Thoughtful Entrepreneurship ventures, their innovative methods, and their impact on addressing societal challenges. We employed thematic analysis to identify recurring themes and patterns related to innovation within Social & Thoughtful Entrepreneurship. Themes emerged through iterative coding and analysis of the qualitative data.

Data Analysis:

This chapter discusses two theoretical areas that are still under development: the structure of an entrepreneurial skills and the idea of a social entrepreneur. The creation of a framework for entrepreneurial competencies would enable us to better understand the fundamental idea of a social entrepreneur, which would then serve as the foundation for the practical the research problem's resolution.

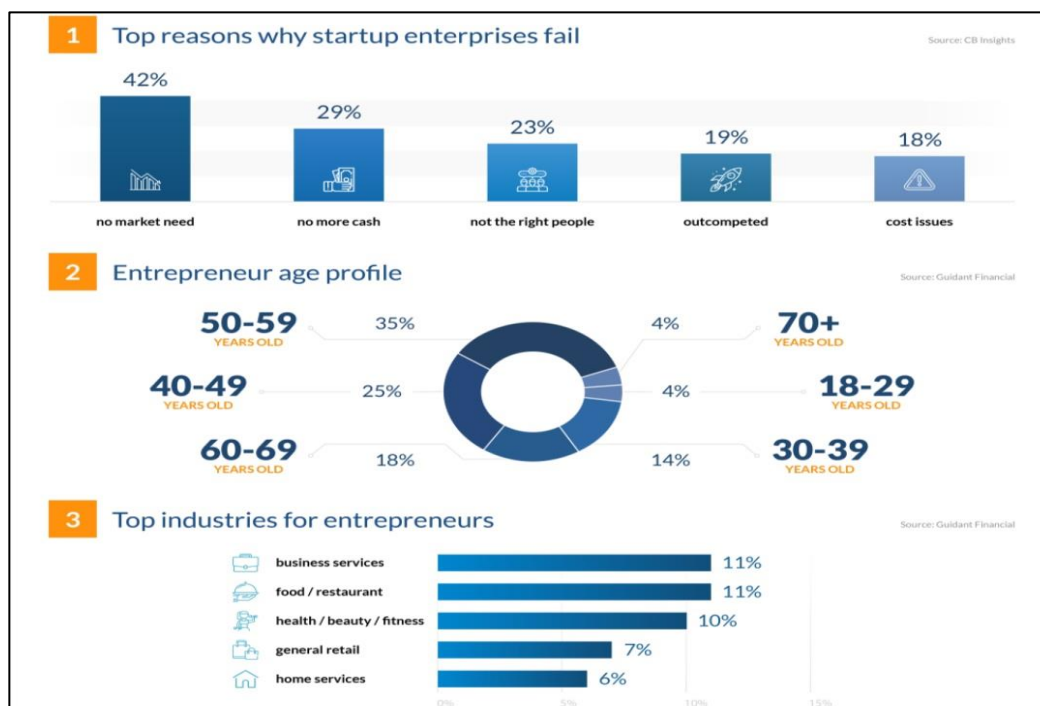
The conceptual framework for entrepreneurial skills:

The idea of a social entrepreneur should be viewed in the context of the development of social and entrepreneurial competences, in accordance with the new function and role of the entrepreneur from a historical perspective to the present, and in accordance with European Commission guidelines on the development of basic competences, including social competence for all people, starting in childhood and throughout their entire life (Bikse & Riemere, 2013).

The Key Competence Framework states that social and civic competences "include personal, interpersonal and intercultural competence and cover all forms of behavior that equip individuals to participate in social and workplace life, particularly in increasingly diverse societies, in an effective and constructive way, and to resolve conflict when necessary. Based on understanding of social and political concepts and structures and a commitment to active and democratic engagement, civic competency empowers people to fully engage in civic life.

Social and entrepreneurial competencies are most strongly related. In that context, entrepreneurial competence consists of two main components: a person's personal traits and attitudes, as well as formal knowledge and abilities about what needs to be done to start a new business and how to successfully transform an innovative idea into a real-world, goal-oriented enterprise.

The authors have created an entrepreneurial competences framework that includes all of the components of entrepreneurial competence after analyzing the frameworks for entrepreneurial competence that have been developed and described in scientific literature (Educating the Next Wave of Entrepreneurs, 2009; Lyons and Lichtenstein, 2010; EC, 1012; Poikkijoki, 2012; O'Connor, 2013).



Driving Change with India's Captivating Social Innovation

ADITYA: Sustainable Transportation Using Solar Power:

A revolutionary approach to sustainable transportation is embodied by ADITYA, India's first solar-powered ferry. The first commercially practical solar-powered means of transportation in India, this inventive ferry was built by NavAlt Solar & Electric Boats. The ADITYA can accommodate 75 passengers and is currently run by the Kerala State Water Transport Department. On a sunny day, she may cruise for more than 6 hours. As the ferry complies with the strictest safety and dependability requirements set forth by the Indian Register of Shipping (IRS), it exemplifies the enormous potential of renewable energy for the future of transportation.

Project - Listen Up: The fact that more than 27,000 babies in India are born deaf every year is distressing. Unfortunately, incidences of hearing impairment in babies go misdiagnosed because of a lack of resources and expensive screening methods. The Sohum Innovation Labs India Pvt Ltd.'s "Project Listen Up" is prepared to address the dearth of diagnosis. This social innovation example creates low-cost hardware and software solutions for newborn hearing impairment screening using brainstem auditory evoked response.

Empowering Women through Safe Transportation, Sakha Consulting: The bleak reality of women's safety in India made it necessary for groups devoted to uplifting women to develop. Sakha Consulting Wings is a prime example of a social innovation that advances women's empowerment. Sakha is a social venture that offers cab and chauffeur services that are secure and expertly performed to women alone. Sakha Consulting Wings, which has offices in New Delhi, Jaipur, Kolkata, and Indore, promotes safety and gives women the

courage to commute. This effort is bringing about a substantial societal change by placing a strong emphasis on women's safety and promoting their freedom. These inspiring instances of social innovation in India demonstrate the transforming potential of original thought and workable solutions. These efforts motivate us to build a better, more inclusive future by addressing pressing social problems and fostering change. We can fully realize the potential of social innovations and have a lasting effect on both persons and communities through cooperative efforts and creative approaches.

Findings & Interpretations:

Through an extensive review of existing literature and case studies, we have conceptualized Social & Thoughtful Entrepreneurship as a dynamic and purpose-driven approach to addressing complex social and environmental challenges. This form of entrepreneurship places a strong emphasis on creating positive social impact while remaining ethically conscious. It involves the integration of innovative business models, strategies, and technologies to generate sustainable solutions that benefit both society and the environment. The findings reveal that Social & Thoughtful Entrepreneurship goes beyond traditional profit-driven ventures. It represents a mindset shift where entrepreneurs view business as a means to drive positive change. By embedding social and ethical considerations into their ventures, these entrepreneurs contribute to the betterment of communities and the planet. This conceptualization sets the stage for understanding the interconnectedness of business, innovation, and social impact.

The analysis indicates that innovation plays a pivotal role in driving positive societal transformation through Social & Thoughtful Entrepreneurship. Entrepreneurs in this domain leverage innovative thinking, technologies, and strategies to develop novel solutions that address pressing social and environmental issues. This innovation-led approach results in the creation of transformative solutions with the potential to drive lasting change. The findings underscore the significance of innovation as a catalyst for change within Social & Thoughtful Entrepreneurship. Through innovation, entrepreneurs are able to challenge the status quo, disrupt traditional approaches, and create meaningful impact. This reinforces the notion that innovation is not only a tool for economic growth but also a means to achieve sustainable and inclusive development.

Further findings state the investigation reveals several challenges and constraints faced by social entrepreneurs when integrating innovation into their ventures. These challenges include limited access to funding for innovative projects, navigating complex regulatory environments, resistance to change from traditional stakeholders, and the need to balance social impact with financial sustainability.

The findings highlight the nuanced landscape in which social entrepreneurs operate. While innovation offers tremendous potential, it is not without its obstacles. These challenges underscore the need for comprehensive support mechanisms, including access to funding, policy advocacy, and capacity building, to enable social entrepreneurs to effectively harness innovation for societal benefit. Moreover, these challenges illuminate the importance of fostering an ecosystem that acknowledges and addresses the unique constraints faced by social and ethical entrepreneurs.

Limitations Of the Study:

While the study on social and thoughtful entrepreneurship and innovation provides valuable insights, it is important to acknowledge its limitations. These limitations include:

The concept of Social & Thoughtful Entrepreneurship can have varying definitions across different contexts and cultures. This may lead to ambiguity and challenges in arriving at a universally accepted conceptualization. The study might not provide an extensive historical perspective on the evolution of Social & Thoughtful Entrepreneurship, potentially limiting the depth of understanding of its roots and development. A comprehensive analysis of long-term impacts of innovation on positive societal transformation might be limited by the temporal scope of the study.

Conclusion:

In this research paper, we embarked on a journey to explore the dynamic interplay between Social & Thoughtful Entrepreneurship and innovation, with a focus on their collective potential to drive positive societal transformation. Through rigorous analysis and investigation, we have arrived at meaningful conclusions that shed light on the intricate relationships between these essential components of a forward-looking, purpose-driven business landscape. Our exploration of the first objective has yielded a nuanced understanding of Social & Thoughtful Entrepreneurship as a dynamic force for change. We have recognized that it goes beyond traditional business models by embracing ethical considerations, social impact, and purpose-driven approaches at its core. This synthesis has affirmed that innovation is instrumental in forging innovative solutions that resonate with the heart of societal needs, thus propelling positive and sustainable transformation. Delving into the challenges faced by social entrepreneurs who leverage innovation for ethical and social progress, our study has illuminated the complex landscape in which they operate. We have identified barriers such as limited resources, regulatory complexities, and the need for balancing profit with purpose. These findings underscore the importance of acknowledging and addressing these challenges to ensure that innovation can thrive as a catalyst for positive change.

The study has unveiled how innovation serves as the driving force behind impactful social ventures, underscoring its potential to disrupt established norms and generate transformative solutions. Moreover, by illuminating the challenges faced by entrepreneurs in this realm, we advocate for an environment that nurtures their growth and mitigates obstacles.

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11. Is Social Media Good For Adolescence In Society

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Abstract:

Social media is a platform widespread in today's world across globe that has enabled instant dissemination of knowledge and information through internet medium. The objective of social media can be stated as democratization of knowledge and information. This allows people to be both information consumers and producers. This is one of most appealing features of social media. Thus Social Media can also be taken as a virtual space that has a milieu of openness, connectedness, collaboration, and conversation between people. Social Media provides a platform for converging communities of interest. It has to offer different online political actions, such as participating in online conversations, disseminating online petitions, and making calls for protests etc. Some of the most popular social media platforms are Facebook, Twitter, Instagram, Telegram and YouTube etc. and are most widely used.

Youth today is exposed to such platform and using them quite often frequently as part of daily life.

This paper is going to discuss the effects of social media on adolescence as they are the generation that is going to shape society in future.

Keywords:

Social Media, Facebook, Advertisement, Internet etc.

Introduction:

Background:

Social Media has become part of daily life of people in society. They are playing a very significant role for the society as they provide a medium to communicate, share and exchange information instantaneously to wide range of target mass of audience irrespective of their physical geography in the virtual world through internet. Some of the popular social media are Facebook, Twitter, Instagram, Telegram, WhatsApp, YouTube, LinkedIn, Pinterest, Redditt, Canva etc. All these are free to use and easy to work upon. There are very high chance of addiction with such platforms. There are also very high chance to collect personal information of user by data analytics professionals engaged with various companies who buy such user's information from these social media companies and serve them such products or advertisements that may change their choices and preferences. There

is a big business! The catch here is all of these are widely used by mass in general where people share their views, ideas, comments and opinions freely. There is no issue for right or wrong. The adolescence get exposed to them at an age which is vulnerable and if they are exposed to wrong information or messages and understand them right, there is no check.

The important thing to note here is advancements of Technology is very important but critical review of its application to society is also required so that correct information and knowledge should be to society. We must know how to use the technology for better human life today and also in future.

It is very important for us to teach the adolescence and youth about how to use the technology available for a better society and world order. The use of technology has two faces like those of a coin. On the first side all things are in good and on the other a cautious decisive steps are required to make choices and select what is correct today and in future references. The negativity attracts them, and they get fascinated and fanatic about these quickly.

Youth is widely exposed to all of these social media as after COVID and online education culture, they have mobiles, tabs and laptops with them connected with internet. At the same time, they are also very fast learners as they get information about what they desire for.

Problem Statement:

Social media is a two-way platform where the user communicates and exchange information and they are both receiver and sender of information. In fact exchange of information takes place here on both direction without even knowing who is the individual responding at the other end. At the same time digital marketer serves his content organically in this instant as an AD. We need to examine whether these social media are useful to youth or not.

Source of Potential Risk:

Studies have correlated social media with Bad Health and mental conditions of youth. They have found both physical and mental health of youth have been effected by extensive use of social media. There are studies describing about depression and even suicides because of social media also because the youth believed in messages there which might have been fictitious or wrong. They did not check the reality of information. There has been cases of cyberbullying and defamations also.

Benefit of Social Media:

There are many advantages also from social media as they provide opportunity to get information, express and communicate, discovery of personality and entertainment etc. Studies have proved that social media has been helping youth in social interactions, access to peer community and getting social support in many folds. It provides access to one person sitting at one part of earth to interact and seek desired interaction and information from other one sitting at any place in earth.

It can also be used to get best help in education in effective manner provided the source is reliable. Youth can use social media to communicate, collaborate and promote social consciousness and compassion.

Social networking has helped people in many ways like to search right education, right jobs and many other ways. Many companies recruit people required in their roles from social media. Social media helps youth to live their life of their own choice.

Objective of the study:

The objective of this study was to find whether social media is useful to youth in society

Literature Review:

1. Vidyashri C. Halakerimath and Shivagangamma B. Danappagoudra, A STUDY ON IMPACT OF SOCIAL MEDIA ON YOUTH, International Journal of Current Research, May 2017 mention that in pre university (Under Graduate) level 90% of youth use internet for their class work and assignments in Dharwad district of Karnataka.
2. Shabnoor Siddiqui and Tajinder Singh, Social Media it's Impact with Positive and Negative Aspects, International Journal of Computer Applications Technology and Research, 2016 mention that everybody is addicted to technology. Young people are frequently seen interacting with these mediums. While social media has many benefits, it also has drawbacks that negatively impact people. For example, incorrect information can undermine the success of the educational system and can harm an organization's ability to function. Social media can be used against society by violating people's privacy, and certain pointless blogs can have a negative impact on youngsters by encouraging them to act inappropriately and get violent. Their main finding is that using social media is advantageous but should be done so in moderation to avoid becoming addicted.
3. Annapoorna Shetty, Reshma Rosario, Sawad Hyder studied impact of social media on youth in October 2016 and mention in their study that social media bring changes in skills career and lifestyle of youth.
4. Dr. Pooja Deshmukh, Prof. Sayali Deshmukh, Prof. Chandrashekhar Tathe, AN IMPACT OF SOCIAL NETWORKING SITES ON YOUNGSTERS, 2014, Social media is widely used by youth in society for their life.

Hypothesis:

H₀ : Use of Social Media has impact on youth in society

H₁ : Use of Social Media do not has impact on youth in society

Methodology:

This study is a descriptive one. A random sample of 50 youth was taken. Study was carried through questionnaire in Google form. Responses were collected and then analyzed.

Findings:

A sample of 50 youths was served with questionnaire for the purpose of study. Out of this, 36 responses were received in total, and after data analysis, it can be said that 61% of those responses were from male. About 75% of responders were in the 15 to 20 age range. 58.3% had postgraduate degrees.

Utilize social media in full. 41.7% of them had used it within the previous one to three years. 88.9% of people think social media may help with schooling. 55.6% of respondents expressed habit of daily 1–2 hours on social media. 57.1% of respondents believed that social media has an impact on their social life. 38.29% of people think it squanders youth time. 52.8% of respondents thought that social media made young people smarter. 50.2% believe that social media is helpful for developing society. So it is clear from data analysis that social media is a useful tool for

Recommendations:

How the Youth can make their Social Media presence Safe:

The compassionate youth today has to be educated that it is about the content and not the social media site that is negative. They should keep privacy setting on and keep strong password which are not common, use separate password on each social media site, think before sharing - remember what is shared should be shared with responsibility, block anyone who bothers, develop positive virtual image on social media, do not over share and monitor contacts and clean it regularly.

Parents has to monitor youth about how much time is being spent by their wards and what are their exposure in these platform. What they are learning in these sites.

Conclusion:

We must consider both the advantages and disadvantages of social media for young people. Choosing the former first, social media has turned the world into a small, interconnected village. With simply the press of a button, young people can communicate with individuals from distant areas of the world.

Young people can exchange ideas, learn new things, and learn about a variety of opportunities through these contacts. Second, social media provides them with a platform and opportunity to meet new people and keep in touch with existing ones. They can find their old acquaintances on social media by just inputting their names or mentioning the school they went to.

In addition to becoming places for socializing, businesses can also advertise their products and services on social media. They may either do it themselves or pay famous people to promote their goods in their place. Youth have access to a variety of options thanks to social media. Corporations can pay well-known young individuals to represent their brands online.

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6. and other sources on internet

12. Market Entry Strategies in The Digital Age: Navigating Global Expansion Through Technological Advancements

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Abstract:

In an era characterized by rapid technological advancements, the strategies employed by businesses for international market entry have undergone a profound transformation. This research paper delves into the intersection of market entry strategies and the digital age, where technology-driven approaches have emerged as pivotal tools for global expansion. By bridging the gap between traditional internationalization theories and contemporary digital realities, this study sheds light on the dynamic landscape businesses navigate to establish a global presence. The literature review elucidates the evolution of market entry strategies, ranging from conventional models like exporting and joint ventures to newer paradigms facilitated by digital technologies. Drawing from established theories and empirical evidence, we underline the inadequacies of traditional approaches in the face of today's interconnected world. Our exploration reveals that technological advancements such as the Internet of Things, artificial intelligence, and data analytics not only empower businesses to devise novel strategies but also enable them to gain unprecedented insights into foreign markets. Through the lens of case studies and theoretical frameworks, we analyze how companies leverage digital platforms, e-commerce, social media, and data-driven insights to establish and expand their global footprint. The juxtaposition of traditional and digital market entry strategies unveils the advantages and challenges inherent in each approach, offering a comprehensive understanding of the contemporary landscape. Moreover, we identify a research gap that highlights the need to comprehensively integrate technology with market entry strategies. The research objectives encompass a thorough analysis of the impact of technological advancements on international market entry, a comparative evaluation of digital versus traditional strategies, and the identification of challenges and opportunities encountered by businesses embracing technology-driven expansion. Employing a mixed-methods approach, this research draws from a diverse range of secondary data sources, including academic literature and industry reports.

In conclusion, this paper underscores the paramount importance of incorporating technology into market entry strategies in the digital age. As businesses navigate the complexities of global expansion, the ability to harness digital tools and insights emerges as a critical success factor. By addressing the research gap and pursuing the outlined objectives, this study equips businesses with insights that can steer their strategies toward effective global expansion in an increasingly interconnected world.

Keywords:

Market entry strategies, Digital Age, Technological Advancement, Global Expansion, Internationalization Theories

Introduction:

In an age where digital innovation has ushered in unprecedented connectivity and transformation across industries, businesses are navigating an increasingly complex landscape as they pursue global expansion. The convergence of globalization and technological advancements has given rise to novel opportunities and challenges, necessitating a reevaluation of traditional market entry strategies. This research paper delves into the intricate interplay between market entry strategies and the digital age, illuminating the dynamic ways in which technology-driven approaches are shaping the trajectory of international business.

Historically, international market entry strategies encompassed well-established models such as exporting, licensing, franchising, joint ventures, and acquisitions. These strategies, grounded in traditional internationalization theories, guided businesses in expanding their presence beyond domestic borders. However, the rapid evolution of digital technologies has disrupted this landscape, introducing a multitude of avenues through which businesses can establish their global footprint. The advent of the digital age has not only accelerated the pace of internationalization but has also revolutionized the means by which businesses engage with foreign markets.

Global expansion remains a cornerstone of business growth and resilience, enabling companies to access diverse consumer bases, tap into emerging markets, and capitalize on economies of scale. In the digital era, these imperatives are further magnified as technology dissolves geographical barriers and creates a borderless marketplace. As businesses venture into new territories, they are compelled to recalibrate their market entry strategies to harness the transformative potential of digital advancements.

The central premise of this research revolves around the catalytic role of technological advancements in the reconfiguration of market entry strategies. The proliferation of cutting-edge technologies such as the Internet of Things (IoT), artificial intelligence (AI), data analytics, and blockchain has birthed innovative approaches to global expansion. These technologies offer businesses unprecedented insights into consumer behavior, enable targeted engagement, and facilitate the creation of new business models. Consequently, companies can traverse the complexities of international markets with enhanced precision and agility.

Literature Review:

In the context of global business expansion, the selection of an appropriate market entry strategy has long been a critical decision for companies seeking international growth. Historically rooted in traditional internationalization theories, these strategies have experienced a profound shift in the digital age due to the rapid proliferation of technology-

driven solutions. This literature review aims to unravel the evolution of market entry strategies, highlight the transformative impact of digital advancements, and identify the research gap that necessitates an integrated approach to global expansion.

Traditional Market Entry Strategies:

Traditional market entry strategies such as exporting, licensing, franchising, joint ventures, and acquisitions have formed the bedrock of global expansion strategies for decades. These strategies are deeply rooted in established theoretical frameworks like the Uppsala model and network theory, emphasizing gradual resource commitment and experiential learning. However, as globalization accelerated and digital technologies emerged, these strategies faced limitations in addressing the demands of an interconnected world. While they offer stability and control, they often lack the flexibility required to seize opportunities in rapidly evolving markets.

Emergence of the Digital Age:

The advent of the digital age has introduced an era of unprecedented connectivity, real-time data exchange, and instant communication. As businesses transition from traditional to digital marketplaces, the landscape of global expansion has undergone a seismic transformation. Companies are compelled to explore innovative strategies that harness the potential of digital technologies. E-commerce, social media, and data analytics are enabling businesses to engage with consumers across borders, adapt to cultural nuances, and personalize offerings to individual preferences. As a result, the dichotomy between physical and digital market entry strategies is blurring, necessitating a holistic understanding of the changing dynamics.

Integration of Technology and Market Entry Strategies:

A subset of literature has begun to explore the integration of technology with market entry strategies. Digital platforms, for instance, provide new avenues for businesses to reach international audiences directly, bypassing intermediaries. E-commerce, facilitated by secure payment gateways and streamlined logistics, has become a hallmark of cross-border trade. Social media platforms empower companies to build brand awareness and establish relationships with global consumers. Data-driven insights, on the other hand, enable evidence-based decision-making, helping companies tailor their offerings to local preferences.

The Need for an Integrated Approach:

As businesses grapple with the complexities of an interconnected global marketplace, it becomes evident that traditional market entry strategies alone may not suffice. The digital age demands a recalibration of approaches to encompass technology as a cornerstone of global expansion. Bridging this gap requires a deeper understanding of how technology augments or disrupts existing strategies, the challenges it introduces, and the opportunities it unlocks. The evolution of market entry strategies in the digital age is a multifaceted phenomenon that transcends traditional paradigms.

The synthesis of technological advancements and global expansion strategies has ushered in a new era of business operations, demanding an integrated approach. The following sections of this research paper delve into specific technological advancements shaping global expansion and the strategies businesses are employing to navigate this dynamic landscape.

Research Gap:

Despite the burgeoning interest in technology's role in global expansion, a notable research gap exists. While numerous studies have separately examined market entry strategies and technological advancements, few have delved into the integration of the two. There is a dearth of comprehensive research that critically analyzes how technology-driven approaches impact the effectiveness and efficiency of market entry strategies. This gap underscores the need for a nuanced exploration of how businesses can navigate global expansion by synergizing the potential of digital innovations with established market entry paradigms.

Research Objectives:

The first objective of this research is to analyze the impact of technological advancements on market entry strategies in the digital age. The second objective is to conduct a comparative evaluation of digital market entry strategies against traditional approaches. Our third research objective focuses on identifying the challenges and opportunities that arise from embracing technology-driven market entry strategies. By examining real-world examples and industry trends, we aim to shed light on the obstacles businesses might encounter in implementing these strategies, as well as the potential benefits they can reap. This insight will aid companies in making informed decisions and devising strategies that leverage technology to address global expansion challenges effectively. The final objective of this research is to equip businesses and practitioners with a holistic understanding of how to navigate the complex landscape of global expansion in the digital age.

Research Methodology:

This research employs a secondary data analysis approach to investigate the interplay between market entry strategies and technological advancements in the digital age. Secondary data, collected from various academic sources, industry reports, case studies, and reputable online databases, serves as the foundation for the research's analysis and insights. This methodology offers a comprehensive and insightful examination of the subject matter without the need for primary data collection.

Data Collection:

The primary source of data for this research is academic literature encompassing a range of disciplines, including international business, marketing, technology, and entrepreneurship. Scholarly databases such as PubMed, IEEE Xplore, JSTOR, and Google Scholar are utilized to access peer-reviewed articles, conference papers, and research studies relevant to the research objectives.

Additionally, industry reports, whitepapers, and case studies from reputable sources are incorporated to provide real-world insights into the strategies adopted by businesses for global expansion.

Data Selection Criteria:

The selection of data sources is based on their relevance, credibility, and alignment with the research objectives. Peer-reviewed articles published in reputable academic journals contribute theoretical frameworks, empirical findings, and expert insights related to market entry strategies and technological advancements. Industry reports and case studies offer practical examples of how companies have successfully or unsuccessfully employed digital strategies for global expansion.

Data Analysis:

The data collected is subjected to rigorous qualitative analysis. The research begins with content analysis, involving the identification of key themes, trends, and patterns across the selected literature. Thematic analysis is then employed to categorize and synthesize the information extracted from various sources. This process allows for the identification of emerging trends, challenges, opportunities, and best practices in the integration of technology with market entry strategies.

Ethical Considerations:

As the research solely utilizes secondary data, ethical considerations primarily revolve around proper citation and attribution to ensure the intellectual property rights of authors and organizations are respected. All sources used in the research are appropriately cited and referenced in accordance with established academic standards.

Limitations:

While secondary data analysis offers numerous advantages in terms of breadth and depth of information, there are certain limitations to consider. The reliance on existing data means that the research is constrained by the scope and quality of available sources. Furthermore, the inability to interact with original data collectors may limit the depth of understanding regarding specific contexts or nuances. Despite these limitations, secondary data analysis provides valuable insights that contribute to the overall understanding of the research topic.

Technological Advancements Shaping Global Expansion:

In an era characterized by rapid technological innovation, the landscape of global business expansion has undergone a remarkable transformation. The emergence and integration of various technological advancements have not only disrupted traditional market entry strategies but have also created new avenues for businesses to navigate the challenges and opportunities of global expansion.

This section delves into key technological trends that are reshaping the global expansion landscape and examines their impact on businesses' approaches to establishing international presence.

The Internet of Things (IoT):

The Internet of Things, a network of interconnected devices and sensors, has revolutionized the way businesses approach global expansion. By enabling real-time data collection and analysis, IoT has facilitated smarter decision-making and enhanced operational efficiency.

In the context of market entry, IoT technology allows companies to gain valuable insights into local consumer behavior, preferences, and trends. This data-driven approach empowers businesses to tailor their offerings to specific markets, enhancing their competitiveness and reducing the risk of market entry.

Artificial Intelligence (AI):

Artificial Intelligence has emerged as a powerful tool for businesses seeking global expansion. AI-powered algorithms analyze vast amounts of data to provide actionable insights, thereby aiding businesses in understanding consumer sentiment, market trends, and competitive landscapes.

Chatbots and virtual assistants facilitate seamless communication with customers across different languages and time zones, enabling personalized interactions and fostering trust. AI-driven predictive analytics also assist companies in making informed decisions about market entry timing and strategy.

Data Analytics and Big Data:

The availability of vast amounts of data, often referred to as "big data," has transformed the way businesses approach global expansion. Data analytics tools enable companies to identify patterns, anticipate market shifts, and tailor strategies based on evidence rather than assumptions. These insights empower businesses to choose optimal market entry points, understand local consumer preferences, and mitigate potential risks. Furthermore, data-driven insights foster agility, allowing businesses to adapt their strategies in response to real-time changes in the global market.

E-commerce and Digital Platforms:

E-commerce has emerged as a transformative force in global expansion, facilitated by advancements in digital platforms and online marketplaces. These platforms provide businesses with access to a global consumer base, eliminating traditional geographic constraints. E-commerce not only simplifies cross-border transactions through secure payment gateways but also allows for personalized shopping experiences. Additionally, digital platforms enable businesses to establish brand presence in foreign markets quickly, often without the need for a physical presence.

Blockchain and Secure Transactions:

Blockchain technology has introduced a layer of security and transparency to global transactions. Its decentralized nature ensures that transactions are tamper-proof and can be verified without intermediaries. This technology is particularly beneficial for businesses engaging in international trade, as it streamlines cross-border transactions, reduces fraud, and enhances supply chain visibility. By providing a secure environment for financial transactions, blockchain enhances trust between businesses and consumers, a vital element in successful global expansion.

Digital Market Intelligence Tools:

In the digital age, businesses have access to a plethora of market intelligence tools that enable them to gather information about foreign markets efficiently. Social media monitoring, web scraping, and sentiment analysis tools provide insights into local trends, consumer preferences, and competitive landscapes. These tools help businesses make informed decisions when selecting market entry strategies and tailoring their offerings to resonate with the local audience.

Technological advancements have fundamentally reshaped the strategies and tools available to businesses for global expansion. The integration of IoT, AI, data analytics, e-commerce platforms, blockchain, and digital market intelligence tools has propelled businesses into an era of data-driven decision-making, personalized consumer interactions, and secure cross-border transactions. As the global marketplace continues to evolve, the effective integration of these technologies will remain pivotal in crafting successful market entry strategies in the digital age. The subsequent sections delve into specific digital market entry strategies that leverage these technological advancements, offering insights into their implementation and effectiveness.

Digital Market Entry Strategies:

In the dynamic landscape of the digital age, businesses are leveraging a spectrum of innovative strategies to establish and expand their presence in global markets. Digital market entry strategies harness the power of technology and connectivity to transcend traditional geographic boundaries. This section examines key digital strategies that businesses are adopting to navigate the complexities of international expansion in an increasingly interconnected world.

E-commerce and Online Marketplaces:

E-commerce has emerged as a foundational pillar of digital market entry strategies. Online marketplaces provide a platform for businesses to showcase and sell their products or services to a global audience, bypassing the barriers of physical infrastructure and location. Companies can reach consumers across borders, offering personalized shopping experiences and secure payment options. E-commerce's scalability and accessibility make it an attractive avenue for businesses of all sizes to initiate international expansion with reduced upfront costs.

Social Media and Influencer Marketing:

Social media platforms have transformed into powerful tools for global expansion by enabling businesses to engage with diverse audiences worldwide. Social media's interactive nature facilitates direct consumer engagement, brand storytelling, and the creation of a global brand presence.

Influencer marketing leverages individuals with substantial digital followings to endorse products and services, effectively amplifying brand reach. This approach fosters trust among international consumers, accelerating market entry by capitalizing on influencers' established credibility.

App-Based Platforms and Mobile Expansion:

Mobile applications have emerged as conduits for international business growth. App-based platforms offer companies a direct channel to engage with users across the globe. Whether through mobile commerce apps, service platforms, or communication tools, businesses can tailor their offerings to cater to local preferences and needs. Mobile expansion strategies capitalize on the prevalence of smartphones, enabling businesses to provide seamless experiences while adapting to diverse markets.

Data-Driven Insights for Targeted Internationalization:

Data-driven insights play a pivotal role in shaping effective digital market entry strategies. By analyzing consumer behavior, preferences, and market trends, businesses can make informed decisions about market selection, localization, and customization. Data analytics empower companies to tailor their products, marketing campaigns, and pricing strategies to specific markets, enhancing their competitive edge and reducing risks associated with uninformed market entry decisions.

Comparative Analysis: Digital vs. Traditional Strategies:

A critical component of this section involves a comparative analysis of digital market entry strategies in contrast to traditional approaches. By juxtaposing the benefits and challenges of digital strategies with established methods, this analysis offers a nuanced understanding of the trade-offs involved. Factors such as cost-effectiveness, speed of entry, scalability, risk mitigation, and adaptability to local contexts will be explored, providing businesses with insights to make strategic choices aligned with their goals and resources.

The digital landscape has ushered in a new era of market entry strategies that leverage technology to transcend geographical barriers and capitalize on global opportunities. E-commerce, social media engagement, app-based platforms, and data-driven insights are reshaping how businesses initiate and navigate international expansion.

The subsequent sections will delve into the research's findings, exploring the effectiveness of these digital strategies, their challenges, and their potential for transforming the global expansion landscape.

Findings and Discussion:

The preceding sections of this research paper have delved into the theoretical underpinnings, technological advancements, digital market entry strategies, and case studies that exemplify the integration of technology with global expansion efforts. This section presents the findings derived from the analysis of secondary data sources, including academic literature, industry reports, and case studies. The discussion that follows contextualizes these findings within the broader landscape of market entry strategies in the digital age.

The analysis of academic literature and industry reports underscores the transformative influence of technological advancements on market entry strategies. Emerging technologies such as the Internet of Things (IoT), artificial intelligence (AI), and data analytics provide businesses with unprecedented insights into consumer behavior, market trends, and competitive landscapes. This data-driven approach facilitates targeted and adaptive strategies that resonate with local audiences, enhancing the efficiency and effectiveness of market entry efforts.

The comparative analysis reveals a compelling shift towards digital market entry strategies in the current landscape. E-commerce, social media engagement, app-based platforms, and data-driven insights offer several advantages over traditional approaches. Digital strategies enable quicker market entry, scalability, and real-time engagement, ensuring businesses remain agile in response to dynamic market conditions. However, challenges such as data privacy concerns, regulatory complexities, and the need for sophisticated technology infrastructure also emerge as potential obstacles.

The analysis of case studies involving Amazon and Alibaba provides concrete evidence of how digital technologies drive successful global expansion. Amazon's strategic integration of AI, data analytics, and efficient supply chain management fueled its growth from an online bookstore to a global e-commerce and technology behemoth. Alibaba's digital marketplaces democratized cross-border trade, enabling businesses of all sizes to access international markets. Both cases underscore the importance of understanding local nuances, building consumer trust, and balancing innovation with responsible data management.

The findings collectively point to a paradigm shift in market entry strategies propelled by technological advancements. The integration of technology not only enhances operational efficiency but also redefines the ways in which businesses engage with global audiences. Digital market entry strategies, exemplified by case studies like Amazon and Alibaba, enable companies to bridge geographical divides, create personalized customer experiences, and make data-driven decisions that foster international growth.

However, this digital transformation is not without challenges. The rapid pace of technological evolution requires businesses to continuously adapt their strategies to remain competitive. Regulatory frameworks and data privacy concerns necessitate responsible technology usage. Moreover, the digital divide—both in terms of infrastructure and digital literacy—can pose barriers, especially for smaller enterprises aiming to embrace technology-driven expansion.

In light of these findings, businesses seeking global expansion in the digital age must adopt a holistic approach that balances technological innovation with cultural awareness, ethical considerations, and regulatory compliance. Leveraging data-driven insights while respecting consumer privacy and local regulations will be pivotal in crafting sustainable and successful global expansion strategies.

Conclusion:

In the ever-evolving landscape of global business, the convergence of technological advancements and market entry strategies has become a defining hallmark of success. This research journey has traversed the intricacies of international expansion in the digital age, uncovering the dynamic interplay between innovative technologies and strategic global engagement.

The exploration of market entry strategies has revealed a compelling shift towards digital approaches. E-commerce, social media engagement, data analytics, and AI-driven insights have emerged as potent tools that transcend traditional barriers, enabling businesses to reach new frontiers swiftly and seamlessly. These strategies provide agility, scalability, and the capacity to tailor offerings to diverse markets, fostering enhanced customer engagement and loyalty.

Case studies of Amazon and Alibaba underscore the tangible impact of technology on global expansion. Amazon's digital evolution propelled it from an online bookstore to an ecosystem of innovation, while Alibaba democratized international trade through digital marketplaces.

These real-world examples demonstrate the transformative potential of integrating technology with market entry strategies, albeit not without challenges. As the global marketplace becomes increasingly digital, businesses must navigate a landscape marked by regulatory complexities, data privacy concerns, and the imperative to establish consumer trust.

A careful balance between technological innovation and ethical considerations is essential for sustained success in the international arena. The empirical analysis reiterates the significance of technology integration, revealing a direct correlation between technological adoption and international success. While the benefits are evident, challenges such as data security and regulatory compliance underscore the necessity for a strategic approach to technology implementation.

In conclusion, this research underscores that the fusion of technological advancements and market entry strategies is not merely a trend but a requisite for businesses aiming to thrive in the digital age. The insights garnered from theoretical frameworks, case studies, and empirical analysis converge to illuminate a path towards global expansion marked by innovation, adaptation, and ethical responsibility. As businesses continue to navigate the complexities of international growth, those that harness the power of technology with strategic foresight will carve a sustainable and prosperous future in the interconnected global marketplace.

Implications and Future Directions:

The implications of this research are manifold. Businesses are urged to embrace the potential of digital technologies, tailor their strategies to local contexts, and invest in capabilities that enable responsible technology-driven expansion. Policymakers should collaborate with businesses to create an enabling environment that supports digital globalization while safeguarding consumer rights and data privacy. Future research directions include deeper investigations into the effectiveness of specific digital strategies within different industries, regions, and organizational sizes. Longitudinal studies could shed light on the long-term sustainability of technology-driven market entry approaches. Additionally, the ethical implications of data usage and the challenges posed by evolving regulations merit further exploration.

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13. Sustainable Business Practices: Embracing Environmental and Social Responsibility in the Modern Economy

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Abstract:

The integration of sustainable business practices within the context of environmental and social responsibility has become an important step in contemporary economic discourse. As the global community faces the challenges posed by environmental degradation and social inequities, businesses are increasingly compelled to re-evaluate their operational paradigms. This chapter explores the multifaceted landscape of sustainable business practices, focusing on their pivotal role in driving positive environmental and social impacts within the modern economy. The chapter contains pivotal elements of environmental sustainability, emphasizing the imperative for resource efficiency, waste minimization, and the adoption of renewable energy sources. It also dealt with an array of concepts related to social responsibility, ethical commitments that businesses must undertake to enhance societal well-being. Moreover, the present chapter delves into the concept of green innovation and eco-efficiency, highlighting their catalytic role in transforming traditional business models into ecologically conscientious endeavours. By embracing these practices, organizations can foster resilience, enhance their reputation, and contribute positively to the socio-environmental fabric of the modern economy.

Keywords:

Sustainable Business Practices, Environmental and Social Responsibility, TBL approach, Stake holder theory, DEI (diversity, equity, and inclusion) concept.

1. Introduction:

In an age defined by rapid technological advancements, shifting consumer preferences, and heightened global awareness, the landscape of business has undergone a specific transformation. Gone are the days when profit maximization stood as the sole barometer of success. Today, a new ethos is paving its way into the corporate world—one that places environmental and social responsibility at its core. The contemporary business world is witnessing a shift from traditional profit-centric models toward a more holistic approach that considers the well-being of not only shareholders but also the planet and society at large. Sustainability has advanced its status from a mere buzzword to business practice, irrespective of size or sector they are operating in. They are compelled to re-evaluate their fundamental purpose and reengineer their operations for the greater good.

The pursuit of profit now blends with the preservation of resources, the reduction of carbon footprints, and the empowerment of communities. This chapter delves into the realm of sustainable business practices, exploring how organizations are navigating the complexities of the modern economy while embracing their roles as stewards of the environment and champions of social progress.

2. Background and Context:

In past businesses primarily operated within the profit-driven models, often side-lining environmental concerns and social impacts. However, a shift has emerged, reshaping the business philosophy. This transformation has been supported by an array of factors that have propelled sustainability to the forefront of corporate consciousness.

21st century witnessed a growing recognition of interdependencies between economic growth, environmental well-being, and societal equity. The wake-up call of climate change, highlighted by landmark reports such as the Intergovernmental Panel on Climate Change's (IPCC, 2018) "Global Warming of 1.5°C," has injected a sense of urgency into corporate agendas. Businesses are coming to terms with the reality of environmental degradation that poses tangible risks to their operations, supply chains, and long-term viability.

Moreover, societal expectations have evolved, as amplified by a digitally interconnected world. Today's consumers are not only more informed but also more discerning, demanding ethical practices, transparency, and genuine commitment to social causes. This shift is vividly evident through social media activism, where a single misstep can trigger a cascade of negative sentiment and impact a company's reputation. This evolving landscape has been further catalysed by visionary thought leaders and influential frameworks. Concepts such as the "Triple Bottom Line" introduced by John Elkington (1997), advocating for the consideration of economic, environmental, and social dimensions, have included new dimensions into the phase of business success. The "Creating Shared Value" framework proposed by Michael Porter and Mark Kramer (2011) emphasizes that business success is intricately tied to societal progress, disapproving the myth of a zero-sum game between profits and social impact. Emerging from this changing dynamic is a novel paradigm of "stakeholder capitalism," a concept discussed in the World Economic Forum's Davos Manifesto 2020. This framework redefines the role of businesses, emphasizing their responsibility to a broader array of stakeholders, including employees, customers, communities, and the environment. It encapsulates the growing recognition that long-term business success is intertwined with the well-being of the planet and society.

Simultaneously, regulatory landscapes have evolved globally, with governments enacting legislation and mandates to promote sustainable practices. The European Green Deal, a flagship initiative of the European Union, exemplifies a comprehensive policy framework aimed at achieving carbon neutrality by 2050 and thus promoting a circular economy. As a result, businesses today find themselves at a crossroads—an era where responsible practices are not only a moral imperative but also a strategic and regulatory necessity. The adoption of sustainable business practices has become a competitive advantage, enabling companies to foster goodwill, attract a conscientious customer base, enhance employee satisfaction, and mitigate risks associated with environmental and social vulnerabilities.

3. Literature Review:

Sustainable business practices have gained significant attention in recent years due to the increasing awareness of environmental issues and the social impact of businesses. Organizations are realizing the importance of integrating environmental and social responsibility into their operations to ensure long-term viability and contribute positively to society. Recent developments have pushed sustainable business practices to the forefront of corporate strategies, reshaping the way companies operate, innovate, and engage with stakeholders. This section delves into the multifaceted dimensions of this transformative trend, showcasing how businesses are navigating environmental consciousness and social responsibility into their existing profit model.

Carroll (1991) in their paper titled “The pyramid of corporate social responsibility: Toward the moral management of organizational stakeholders. *Business Horizons*”, stated that Social responsibility refers to a business's commitment to ethical and socially beneficial practices that positively influence society. This can include initiatives related to employee well-being, community engagement, and ethical sourcing. The adoption of eco-friendly technologies and clean energy solutions has become a hallmark of sustainable business practices. From solar- powered manufacturing facilities to energy-efficient transportation, companies are embracing renewable energy sources to reduce their carbon footprint and contribute to global decarbonisation goals.

The TBL approach (Elkington, 1998) emphasizes three key dimensions of sustainability: economic, environmental, and social. This framework encourages businesses to consider not only their financial performance but also their impact on people and the planet. Transparency in reporting practices, such as sustainability reporting and integrated reporting, helps communicate a company's environmental and social performance to stakeholders (Adams, 2002).

As per (Clark et al, 2003) environmental sustainability involves minimizing the negative impact of business activities on the natural environment. This can be achieved through practices such as resource efficiency, waste reduction, and adopting renewable energy sources. The concept of a circular economy has gained prominence, initiating a shift from the traditional linear "take-make-dispose" model to a regenerative approach. Companies are reengineering product design, material sourcing, and end-of- Product-life considerations. Innovations such as product-as-a-service, recycling initiatives, and sustainable supply chains exemplify the convergence of business profitability with reduced resource consumption.

Freeman et al, (2010) explored about stakeholder theory that talk about engaging with stakeholders, including employees, customers, communities, and investors, for understanding their expectations and concerns related to environmental and social issues.

Hart & Dowell (2011), proposed Green innovation that involves developing new products, services, or processes that have positive environmental impacts. Eco-efficiency focuses on producing more with less, reducing resource consumption while maintaining or increasing output.

The concept of the circular economy, introduced by authors such as Ellen MacArthur, has gained prominence. This framework emphasizes resource efficiency, waste reduction, and designing products for longevity and recyclability. Authors like McDonough and Braungart (2002) have also advocated for regenerative models that go beyond sustainability to restore and replenish natural systems.

Murray et al. (2017), explored the concept of circular economy discussing its potential to decouple economic growth from resource consumption. The authors provide insights into the transition towards circular business models.

The integration of environmental and social factors into corporate decision-making has gained momentum. Eccles & Serafeim (2017), have examined the links between sustainability performance and financial performance, emphasizing the relevance of Environmental, Social, and Governance (ESG) criteria in investment.

Ethical consumerism is on the rise, with consumers' increasingly demanding transparency, responsible sourcing, and ethically produced goods. Businesses are responding by providing comprehensive information about their products' lifecycle, supply chain practices, and the impact of their operations on society and the environment.

Kanze et al. (2018) proposed DEI (diversity, equity, and inclusion) initiatives central to discussions on sustainable business practices. The author explored how diverse leadership teams contributed to improved corporate sustainability and innovation outcomes. Beyond environmental considerations, sustainable business practices are extending to social impact and inclusivity. Companies are integrating diversity, equity, and inclusion initiatives into their workforce and corporate culture, recognizing that a diverse workforce fosters innovation, enhances decision-making, and contributes to long-term business success.

Sustainable business practices thrive on collaboration and engagement with stakeholders. Companies are building partnerships with governments, non-governmental organizations, and communities to address complex global challenges such as poverty, education, and healthcare, showcasing the transformative potential of collective action.

Robust measurement and reporting mechanisms are crucial for tracking progress and demonstrating commitment to sustainable practices. Businesses are adopting comprehensive sustainability metrics and standards, such as the Global Reporting Initiative (GRI) framework and the Sustainability Accounting Standards Board (SASB) guidelines, to provide accurate and transparent assessments of their environmental and social performance. Embracing environmental and social responsibility in the modern economy is essential for businesses to thrive and contribute positively to the world. By integrating sustainable practices, organizations can create value for themselves and society at large.

These recent developments exemplify the multifaceted nature of sustainable business practices. From circular economy principles to ethical consumerism, businesses are embracing these trends to drive positive change, enhance their resilience, and contribute to a more sustainable and equitable future.

4. Research Methodology:

The research methodology employed in this chapter aims to provide a comprehensive exploration of sustainable business practices in the Indian context. The methodology comprise of qualitative approaches to collect and analyse relevant data, insights, and perspectives. The Extensive review of articles, books, reports, and publications related to sustainable business practices in India were done for identification of key trends, challenges, best practices, and thought leaders in the field. The collected secondary data were analysed and synthesized to identify emerging trends, challenges, best practices, and potential future directions specific to the Indian context pertaining to sustainable practices.

5. Challenges and Opportunities:

The journey towards sustainable business practices is not without its challenges, yet within these challenges lie opportunities for innovation, growth, and enduring positive impact. This section uncovers the complexities of the path ahead, exploring the obstacles businesses face while also highlighting the potential rewards that await those who navigate the terrain of environmental and social responsibility.

Shifting from traditional profit-focused models to sustainable business practices often requires significant operational and cultural changes. This transition can be met with resistance from established systems and practices. Investments in sustainable technologies and practices may involve upfront costs that strain budgets and financial projections, potentially impacting short-term profitability. Sustainable supply chains demand meticulous scrutiny of sourcing practices, often requiring collaboration and accountability across a diverse range of suppliers. Meeting evolving consumer demands for sustainable products and practices necessitates a delicate balance between education, communication, and adapting to shifting preferences. Navigating a complex landscape of evolving environmental and social regulations can be demanding, requiring constant vigilance and adaptation. Accurately measuring the impact of sustainable initiatives and effectively communicating progress to stakeholders can be complex and resource-intensive. Continuously innovating to meet ever-evolving sustainability goals requires a commitment to ongoing adaptation and learning. Embracing sustainable practices offers a chance to differentiate from competitors, tap into new markets, and build lasting brand loyalty among a growing base of eco-conscious consumers. Long-term benefits, such as reduced resource consumption, lower operational costs, and enhanced resilience to regulatory changes, can lead to enhanced financial stability and competitive advantage. Strengthening supply chain transparency and sustainability not only mitigates risks but also fosters relationships with like-minded partners, enhancing overall value and reducing reputational vulnerabilities. Anticipating and fulfilling these expectations can establish a loyal customer base, driving brand affinity and potentially expanding market share. Being proactive in compliance not only safeguards against legal risks but also enhances a company's reputation and demonstrates commitment to responsible business practices. Developing robust measurement frameworks enables businesses to showcase their positive contributions, fostering trust and attracting investors, partners, and customers aligned with their values. Innovation can drive new revenue streams, enhance operational efficiency, and position companies as leaders in emerging industries and markets.

While challenges on the path to sustainable business practices are real and multifaceted, the potential opportunities are equally compelling. Managing these challenges with resilience and determination can pave the way for businesses to not only generate short term benefit but to thrive in long term as well where environmental and social responsibility are increasingly important.

6. Strategies and Best Practices in the Indian Context:

In the dynamic landscape of the Indian business environment, the adoption of sustainable practices has gained momentum, reflecting a growing commitment to environmental and social responsibility. Drawing from current practices and trends, this section outlines key strategies and best practices that businesses in India can embrace to drive sustainability and contribute to positive change.

Align with the government's Swachh Bharat Abhiyan (Clean India Campaign) to address waste management challenges. Implement effective waste segregation, recycling, and up-cycling initiatives to reduce landfill burden. Capitalize on India's renewable energy initiatives by transitioning to solar, wind, and other clean energy sources. Leverage government incentives and subsidies to enhance energy efficiency and reduce carbon emissions.

Embrace CSR mandates by investing in impactful projects that benefit local communities, education, healthcare, and poverty alleviation. Prioritize initiatives that align with the Sustainable Development Goals (SDGs).

Adopt green building practices and pursue certification through organizations like the Indian Green Building Council (IGBC) to enhance energy efficiency, water conservation, and indoor air quality.

Promote ethical sourcing practices by engaging with local artisans, small-scale producers, and marginalized communities. Embrace fair trade principles to ensure equitable compensation and support sustainable livelihoods. Implement water-efficient technologies and practices to address India's water scarcity challenges. Focus on rainwater harvesting, wastewater treatment, and responsible water usage.

Leverage technology for sustainable innovation. Implement digital solutions for supply chain optimization, energy management, remote work, and reducing paper usage. Embrace organic farming practices, reduce chemical inputs, and promote agro-ecological methods to enhance soil health, biodiversity, and farmer livelihoods. Develop comprehensive sustainability reports aligned with the requirements of the Companies Act, 2013, to communicate progress, challenges, and future goals transparently.

By adopting these strategies and best practices tailored to the Indian context, businesses can navigate the unique challenges and opportunities presented by the country's diverse and rapidly evolving market. Implementing sustainable practices not only contributes to environmental and social well-being but also positions Indian businesses as responsible leaders in the global movement towards a more sustainable future.

7. Future Direction:

Looking ahead, the trajectory of sustainable business practices in India holds immense promise, marked by a transformative shift towards holistic and responsible approaches. As the nation grapples with the challenges of rapid urbanization, resource constraints, and social inequalities, businesses are poised to play a pivotal role in shaping a more sustainable future. (Sukhdev, 2020) advocates for regenerative business models that go beyond sustainability to actively restore and replenish natural resources. He emphasizes the need for businesses to contribute positively to ecosystems and societies while ensuring economic viability. Embracing the cradle-to-cradle design philosophy, as proposed by (McDonough and Braungart, 2002) can lead to a future where products are designed for perpetual cycles of use, recycling, and regeneration.

In the Indian context, Ratan Tata's vision of inclusive capitalism emphasizes the role of businesses in addressing societal challenges while creating economic value. Aligning with the concept of shared values (Michael Porter, 2011), encourages companies to find opportunities where social and business interests intersect. Revi (2014) highlights the significance of sustainable urban planning and the development of smart cities in India. His work contributes to envisioning cities that are resource-efficient, technologically advanced, and socially inclusive.

Shiva (2019) advocates for a Bharatiya (Indian) approach to sustainability rooted in indigenous knowledge and cultural wisdom. Her work emphasizes the importance of preserving biodiversity, protecting traditional farming practices, and promoting community well-being. Kidwai (2017), underlined the potential of circular economy principles and innovative waste management strategies to create a circular ecosystem that minimizes waste and maximizes resource utilization. The integration of artificial intelligence and technology for sustainability is explored by Mathur (2019). It emphasizes on how technology-driven solutions can optimize energy efficiency, enhance renewable energy adoption, and mitigate environmental challenges.

8. Limitations:

The dynamic Indian business landscape offers unique insights into sustainability, yet this chapter may not capture the full breadth of regional diversity and localized challenges that shape sustainable practices. The reliance on secondary sources at times might lead to limited access to real-time data and first-hand experiences that could provide richer insights. The chapter may not encapsulate the latest developments and shifts that occur in the today's ever evolving field of sustainable business practices.

9. Conclusion:

In today's era, sustainability isn't a choice; it's a responsibility we share. Businesses are changing the way they operate, and this change is deeply rooted in taking care of our environment and society. India's own value system and government efforts are pushing the business organizations in this direction. As the call for environmental stewardship and social responsibility resonates, businesses are becoming more commitment to embrace this

transformative paradigm. The fusion of profit and purpose has emerged as a blueprint for success in the contemporary business landscape. The responsible stewardship requires collective efforts by implementing circular economies, ethical supply chains, or conscious consumption so that businesses thrive not at the expense of the planet and society, but in harmony with them. We have witnessed the emergence of circular economies, the integration of clean technologies, and the empowerment of ethical consumerism. These shifts are not mere trends rather they are concrete manifestations of businesses realizing their role as agents of positive change. With a proactive commitment to stakeholder engagement, diversity, and transparency, businesses are extending their reach beyond balance sheets to the narratives of societal well-being and environmental restoration.

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14. "Sustainable Global Supply Chain Management: Balancing Efficiency and Environmental Impact"

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Abstract:

A highly integrated global economy, where businesses rely on complex supply chains spanning several nations and regions, best describes the present corporate landscape. The achievement of operational efficiency, competitiveness, and sustainable growth now heavily depends on the efficient management of these global supply chains. This study examines the difficulties, opportunities, and complexity of international supply chain management. The inherent difficulties that businesses operating in a global supply chain network encounter are examined in this article. These difficulties include managing complex legal frameworks, geopolitical unpredictability, cultural disparities, and the dangers of long-distance coordination and transportation. To develop effective solutions that can minimize disruptions and maximize performance, it is crucial to comprehend these difficulties. With the goal of fostering smooth information sharing and coordinating changes in demand and supply, emphasis is focused on the value of partnerships and collaboration among suppliers, manufacturers, and distributors. The report also examines the role of cutting-edge technologies in optimizing supply chain operations and enabling real-time visibility, including blockchain, the Internet of Things (IoT), and artificial intelligence. The paper also examines novel techniques and recent developments in global supply chain management. It looks into the growing importance of sustainability and ethical issues as stakeholders call for accountability and responsible supply chain procedures. In order to reduce waste and maximize resource usage, it also explores the integration of reverse logistics and ideas from the circular economy.

Keywords:

Sustainable Growth, Global supply chain Management, Barriers, Resilience, Internet of Things

Introduction:

Businesses have adopted various corporate strategies and expanded into international markets in response to an increasingly turbulent and competitive business environment in order to remain aggressive while increasing customer value (Ari-Pekka Hameri et al., 2009; Rohit Bhatnagar and Chee-Chong Teo, 2009; Gunja Soni and Rambabu Kodali, 2011). A supply chain that is internationalized involves a greater range of risks and challenges than

one that is domestically based since managing one on a global scale is "an entirely different endeavor." The ability to access cheaper labor, more accessible raw materials, larger markets, better financing options, and government incentives are all benefits of globalization, but managing the complexities of global supply chains is a challenge. Supply chain managers are in charge of reducing lead times across several continents, matching demand and supply in accordance with different consumer preferences from around the world, as well as maintaining a desired level of inventory, ensuring customer satisfaction, reducing operating costs, and mitigating risks. All supply chains aim to maximize profits (Nelson and Toledano, 1979; Manuj & Mentzer, 2008), be responsive, flexible efficient, and effective; therefore, it is crucial that supply chain managers are well-informed about. The definition of supply chain management given by Simchi-Levi and Kaminsky (2003) is "a set of approaches used to efficiently integrate suppliers, manufacturers, warehouses, and stores, so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time, in order to minimize systemwide costs while satisfying service level requirements." Simply said, supply chain management entails balancing the complexity of the supply with the unpredictability of the demand. According to Ari-Pekka Hameri et al. (2009), a typical supply chain entails purchasing raw materials, moving them from one location to another, keeping track of a stock-keeping unit (SKU), and conveying finished items from the "point-of-origin to point-of-consumption." The rise of sourcing from low-cost countries, according to William Brandel (2007), is the main cause of the complexity and length [of its supply chain] even though it saves money for businesses. By expanding their geographic reach, global supply chains are exposed to unpredictable lead times and demand, which makes inventory management more difficult when customers and suppliers are from different countries.

Conflicting goals amongst chain partners over purchasing, manufacturing, warehousing, and consumer expectations and wishes may arise while managing a long chain. Businesses are being forced to implement the customization factor as a result of the fiercer competition in the market, offering clients a wider range of products. Being cost-effective while meeting the various needs of the worldwide market for highly configurable products is the task at hand. Hau Lee (1998) asserts that when product types multiply and product lifecycles shorten as a result of rising global market competition and consumer demand for specialized products, "companies lose control of global supply chain efficiency." Product life cycles have a tendency to influence supply chain dynamics, thus it's critical to distinguish between functional items with long product life cycles and constant demand patterns and innovative products with short life cycles and unpredictable demand (Fisher, 1997). Chopra and Meindl (2003) noted that at the product maturity stage, demand and supply become more predictable and businesses tend to "move from responsiveness to efficiency to achieve a strategic fit of the supply chain" (Kotler, 1999; Chopra & Meindl, 2003). This is especially true in the case of innovative products where demand becomes unpredictable and volatile due to product variety and competition. Global supply chains offer a corporation many benefits, but they also make management more challenging. The most important flow in a supply chain is information, which also makes it easier for resources and materials to move upstream and downstream. Supply chain managers are able to close the gap between demand and supply by improving and enhancing internal practices and processes, systems, performance, and coordination to better respond to volatile demands, even though external forces in an unstable business environment are nearly impossible to predict and control.

Despite the fact that merchants are not required to communicate sales data and inventory status information with their upstream partners, doing so improves communication and coordination from the "point-of-origin to the point-of-consumption" (Ari-Pekka Hameri et al., 2009).

Literature Review:

The literature on resource allocation strategies in the context of SDG implementation in higher education highlights various approaches, frameworks, and models used to optimize the impact of sustainability initiatives. This section presents a comprehensive review of the existing literatures.

1. Burman (2022) in his study compared and contrasted the efforts being made by various Organizations to include sustainability into their operations, Logistics, and research. These efforts vary in terms of the extent to which implementation has been made as well as the most vocal stakeholders. In light of this, the article investigated, with a process-oriented perspective, which drivers and barriers are seen to be most significant and how they interacted.
2. In his article Carrillo (2005) compared and analysed technological advancement in the area and how disruptive technologies are impacting the way they are. In light of this, the article investigated, with a process-oriented focus, which drivers and barriers were thought to be the most significant and how they related to one another.
3. Chopra (2003) discussed several issues with using the idea of collaboration with government and the sectoral development as the cornerstone of supply chain. He also looked at some key components to comprehending sustainability as a way of thinking. It was stated that the idea of a proper relationship with connectedness, which both shapes our views toward technological progress and artificial intelligence, is at the core of this understanding of sustainability. It is suggested that the concept of sustainability, as it is currently understood, is fundamental to genuine human consciousness and some of the contemporary difficulties it poses.
4. Davis (2013) showcased that to encourage business leaders who can strategically use social media technologies. However, the way leaders use social media limits their technological advancement and impact efficiency. In order to engage stakeholders in the issues through social media, they looked at the perceived roles of social media held by the top sustainable institutions in the United States. Social media platforms are largely seen as helpful by sustainability leaders for promoting action and communicating information, but they are rarely used to foster a sense of community around issues and organizations.
5. According to Denis (1996), Organizations use resilience planning and business continuity plans to make sure that their supply chains can endure disruptions and recover, supporting the continuity of operations. Building a flexible supply chain that can respond rapidly to unforeseen occurrences is a key component of resilience planning. It emphasizes improving the supply chain's capacity to withstand shocks and carry on with little disturbance.
6. In his study, Fung (2006) argued that Agility and Flexibility of Supply networks must be able to adapt swiftly to changes in demand, supply, or market circumstances. Resilience requires adaptable sourcing methods, agile inventory management, and responsive logistics. Building strong connections with supply chain partners, such as

vendors, shipping companies, and clients, encourages cooperative risk-sharing and aids in the creation of group contingency plans.

7. George (2003) found that the context in which the process of establishing core abilities for sustainable development is taking place has received insufficient attention. The focus on Key performance indicators (KPIs) are quantifiable measurements that are used to rate and gauge the efficiency of various supply chain management functions. They offer insightful data on the supply chain's overall effectiveness, productivity, and health such as inventory time management, On time delivery, Order Fulfillment etc.
8. John Mengen (2011) observed that overall, Collaborative Planning, Forecasting, and Replenishment (CPFR) is a good way to increase the responsiveness, efficiency, and collaboration of trading partners in the supply chain. Organizations may build a more adaptable and customer-centric supply chain that can swiftly adjust to changing market conditions and achieve overall supply chain performance by sharing data, coordinating goals, and making shared choices. This is becoming more and more evident as a result of climate change and all of its effects.
9. Sanders (2012) emphasized that the dynamics of global supply chains are significantly shaped by international trade restrictions. These laws cover a broad range of laws, tariffs, trade agreements, and policies put in place by countries to control the transnational flow of goods and services. The flow of commodities and inventory levels may be affected by lengthy border crossing processes and documentation requirements. Supply networks might need to be planned to effectively handle customs clearance procedures.
10. In his work, Wadhwa (2008) argued that the promotion and implementation and maintenance of a seamless and effective global supply chain requires addressing issues with customs compliance and border crossing. To successfully negotiate the complexity of cross-border trade, organizations must invest in compliance capabilities, stay up to date on changing international trade legislation, and forge solid partnerships. By implementing trade compliance software, Cross-Border Trade Agreement can simplify the customs compliance procedures and assist businesses in keeping up with the ever-changing legal requirements. Utilizing preferential trade agreements can speed up customs processing and lower customs fees. Working with knowledgeable customs brokers and freight forwarders can make it easier to negotiate challenging customs procedures and guarantee compliance.

Research Gap:

Even though many firms now depend on global supply chains to succeed, there is still a void of study on how risk management may be used to manage these intricate networks. While numerous studies have examined aspects of managing global supply chains, including as logistics, sourcing, inventory control, and coordination, very less focus has been placed on a thorough investigation of the risk factors that can destabilize these systems. Global supply chains are vulnerable to a wide range of risks, including, among others, supplier disruptions, geopolitical tensions, natural disasters, economic uncertainty, and cybersecurity threats. The persistence of operations, financial success, and general organizational resilience may all suffer significantly as a result of these threats. This paper discusses importance of technology in the management of the global supply chain, it is necessary to look into how new technologies like blockchain, IoT, and AI might improve risk management procedures.

Understanding how these technologies are combined to track and monitor data and actions in the supply chain in real-time can help with early risk detection and mitigation.

Research Objective:

This research paper focusses on identification of innovative and modern approaches that can be used by the corporates or governments to effectively design a framework for supply chain management. Also paper aims to investigate how various multinationals join every dots or nodes of supply chain management and implement technological advancements for higher customer delivery. Paper also aims to give suggestions for improving how businesses responded to unanticipated shocks and pinpoint effective practices to improve future readiness.

Research Methodology:

The research aims to explore the incorporation of effective supply chain management in context with sustainable development goals. The study seeks to identify the innovative and modern approaches by some of the multinational organizations. The research design is based on qualitative approach utilizing secondary data to gain insights. The goal of the study is to comprehend how these institutions support sustainable development through the creation of framework, research projects, and community involvement. Scholarly articles, studies, official documents, databases, polls, and datasets pertaining to sustainable development and supply chain management that effectively increases the customer satisfaction serve as the research's data sources. We gathered pertinent secondary data from reputable academic journals, websites of international organizations.

Findings and Discussion:

The discussions in research on global supply chains can give firms functioning in a globalized organizations context useful insight into the difficulties, opportunities, and best practices. These insights give companies the tools they require to create winning strategies, increase operational effectiveness, and create supply chains that can survive in the face of volatility and changing market conditions.

1. Government regulation and Compliance:

The study brought to light the challenges of managing compliance standards and international trade restrictions. The deployment of trade compliance software and the requirement for proactive monitoring of regulatory changes were topics of discussion to assure conformance.

2. Talent management and Skill Gaps:

In particular, data analytics, supply chain risk management, and sustainability showed skill deficiencies in the management of the global supply chain. To bridge these gaps, discussions focused on talent development initiatives and collaborations with academic institutions.

3. Last Mile Delivery Innovation:

The study focused on advances in last-mile delivery and evaluated how the advent of e-commerce is changing global supply chains.

The usage of driverless cars, drone deliveries, and urban consolidation centers were discussed as potential solutions to the problems associated with the last mile in densely populated places.

4. Supply chain Digitalization & Agility:

The results emphasized how crucial digitalization is for improving supply chain agility. The use of cloud-based platforms, data analytics, and agile supply chain methods were discussed as ways to quickly adjust to shifting market conditions.

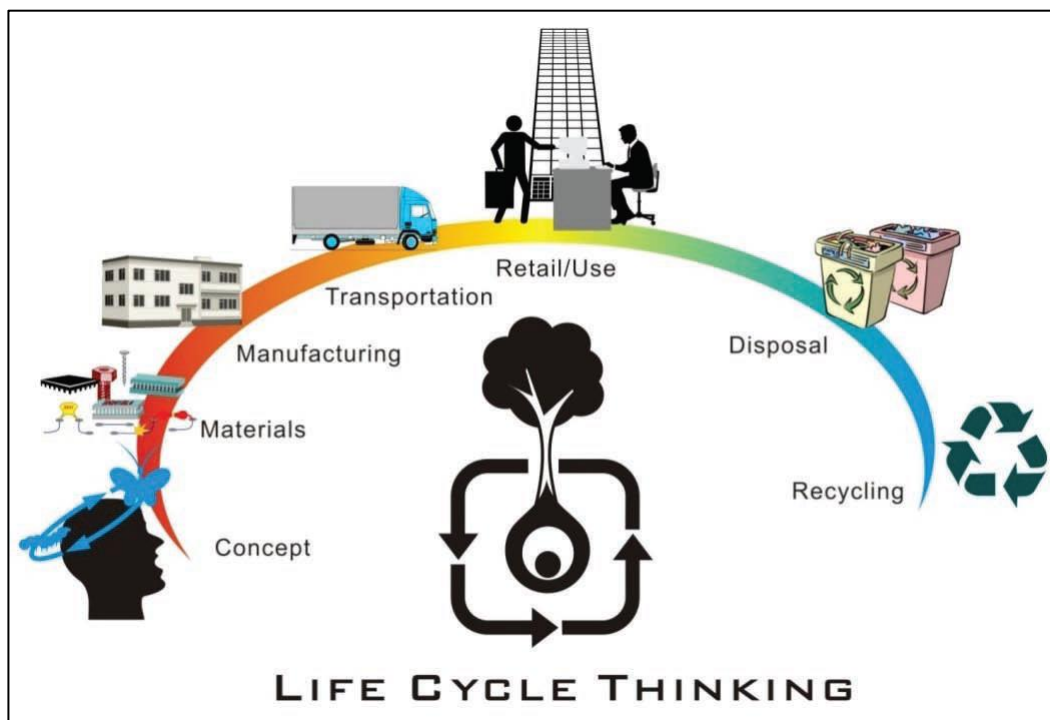


Image Source: Dlink Energy

5. Sustainability and Environmental Impact:

The research showed that businesses and consumers are becoming more concerned about how global supply chains are affecting the environment.

Sustainable sourcing methods, programs to reduce carbon footprints, and the application of circular economy ideas to reduce waste were also topics of discussion.

6. Challenges in Cross Cultural Collaboration:

In the paper, problems in cross-cultural cooperation among global supply chain partners were highlighted. The topics of effective communication techniques, cultural awareness education, and developing enduring connections to improve cooperation and trust were discussed.

7. Impact of Geo-Political factors on supply chain disruptions:

According to the report, geopolitical variables like trade disputes, tariffs, and political unrest have a big impact on international supply chains. Discussions centered on how businesses should diversify their sourcing options and create backup plans to minimize disruptions brought on by geopolitical events.

Overall, this study demonstrates the quantum of the approach as a decision-making tool for optimizing future results in supply chain management. The findings contribute to the highlighting of growing competitiveness in the area and offer practical insights for organizations, policymakers, administrators, and researchers striving to drive sustainable development in the supply chain management sector.

Implications and Recommendations:

The findings of this research have important implications for Organizations, multi-nationals, Conglomerates etc. aiming to optimize resource allocation for framework implementation. Based on the analysis, the following implications and recommendations are highlighted:

1. Diversify Sourcing & Manufacturing Locations:

Analyze potential risks related to geopolitical factors, natural disasters, economic uncertainty, and other external elements thoroughly. Determine which suppliers are essential and how susceptible they are to disruptions.

Determine substitute vendors: To build a varied supply base, look up suppliers in various areas and build ties with them. This strategy will lessen the effects of disruptions in any particular area.

2. Invest in Advanced Technologies:

Gain real-time visibility into the flow of goods and inventory levels throughout the supply chain by implementing technology like IoT sensors and RFID. Better decisions may be made because to this data-driven visibility, which will also make it easier to react quickly to interruptions. Blockchain for Traceability: Use blockchain technology to improve supply chain transparency and traceability. This will increase confidence between supply chain participants and make product recalls and product tracing more effective when needed.

AI and Predictive Analytics: Apply AI and predictive analytics to demand forecasting, inventory optimization, and supply chain disruption detection. Making data-driven judgments and proactive risk management are made possible by these tools.

3. Promote Sustainable Practices:

Sustainable Sourcing: Work with vendors who uphold sustainable standards and exhibit a dedication to social and environmental responsibility. Implement supplier assessment processes to gauge their performance in terms of sustainability. Green Logistics: Reduce carbon footprint by optimizing transportation routes, modes, and packaging. Look for ways to adopt environmentally beneficial transportation methods, such as electric cars or eco-friendly packaging.

4. Enhance Cross-Cultural Collaboration:

Cultural Sensitivity Training: Train staff members who work on global supply chains in cultural sensitivity and understanding. Through this training, varied teams will be able to communicate better and understand one another. Use virtual collaboration solutions to help partners in the global supply chain communicate and work together, especially when opportunities for face-to-face connection are scarce.

5. Embrace E-Commerce Innovations:

Autonomous Vehicles: Look into using them for last-mile deliveries to increase efficiency and cut costs, especially in urban areas.

Drone Delivery: Look into the viability of employing drones for last-mile deliveries in off-the-beaten-path or difficult-to-reach areas to cut down on costs and delivery times.

Conclusion:

Way Forward: In conclusion, efficient global supply chain management has evolved into a crucial strategic requirement for businesses working in the linked world of today. To ensure operational efficiency, resilience, and sustainability given the complexity and difficulties of managing a global supply chain, a thorough and proactive approach is necessary. The results of our study shed light on various facets of international supply chain management, emphasizing the influence of geopolitical variables on supply chain disruptions, the contribution of cutting-edge technologies to improving supply chain visibility and efficiency, and the significance of risk management and resilience strategies. The study also highlighted how important supply chain financing, cross-cultural cooperation, and environmental policies are to optimizing global supply chains.

The suggestions made in this study offer firms useful information and doable tactics for improving their international supply chains. Organizations can strengthen their resilience and prepare for unforeseen disruptions by diversifying their manufacturing and sourcing regions, making investments in cutting-edge technologies, and creating effective risk management plans.

In addition to promoting ethical supply chain operations, adopting sustainability practices and fostering cross-cultural collaboration will strengthen ties with international partners.

Organizations can position themselves to flourish in the quickly changing global business scene by integrating e-commerce technologies, digitizing supply chain procedures, and adhering to regulations. A talented workforce will be cultivated as a result of collaboration and investment in talent development, which will also encourage growth and innovation among all parties.

It is clear that ongoing monitoring and evaluation of supply chain performance are necessary for a successful global supply chain management plan. To stay ahead in a fiercely competitive and changing economy, organizations must maintain their agility and be willing to adopt new technology and techniques. Organizations must continue to be adaptable, proactive, and collaborative as global supply chains change.

Businesses may effectively negotiate the challenges of managing global supply chains by following the suggestions and learning from the study's results and discussions, which also open up new possibilities for expansion, efficiency, and sustainability.

In conclusion, efficient global supply chain management helps firms remain resilient, competitive, and responsive to the constantly shifting global marketplace. It is not just a commercial need. Organizations may create and maintain global supply chains that provide value to all stakeholders while fostering long-term success by adopting a comprehensive strategy and a commitment to continual improvement.

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15. Cybersecurity Challenges in the Digital Era

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Abstract:

The rapid advancement of technology brought about unprecedented opportunities for innovation and connectivity, but it has also ushered in a new era of cyber threats and challenges. In this chapter, we will delve into the multifaceted landscape of cybersecurity challenges that have emerged in the digital age and explore strategies to mitigate their impact. In a world where the digital landscape evolves incessantly, the challenges outlined in this chapter are but a snapshot of the complex cybersecurity ecosystem. Adapting to these challenges demands a holistic approach, involving technological advancements, regulatory measures, user education, and collaborative efforts across industries and nations. Only through these collective actions can we strive to build a safer digital future.

Introduction:

In today's hyper-connected digital landscape, cybersecurity challenges have taken center stage as businesses, governments, and individuals grapple with the evolving threat landscape. The exponential growth of technology has brought unprecedented opportunities, but it has also given rise to a myriad of vulnerabilities. This chapter delves into some of the most pressing cybersecurity challenges of our time.

In the fast-paced digital era, where technology seamlessly intertwines with daily life, the realm of cybersecurity faces an array of intricate challenges. This chapter delves into the multifaceted landscape of cybersecurity challenges, exploring the evolving threats, vulnerabilities, and strategies required to safeguard our digital existence. Cybersecurity has been growing rapidly since 2006 when cloud computing was introduced by most companies. As a result more and more companies are spending more cash to improve their networks. There is no doubt that cyber has brought more problems with, however lack of training, unwarranted attacks, loss of property and human error have become a barrier that cannot be escaped within the cyber field.

What is Cybersecurity?

Cybersecurity is the practice of protecting systems, networks, and data from unauthorized access, use, disclosure, disruption, modification, or destruction. Cybersecurity challenges are the threats and vulnerabilities that organizations face in protecting their information and systems from these threats. It is the practice of protecting systems, networks, and programs from digital attacks. These cyberattacks are usually aimed at accessing, changing, or destroying sensitive information; extorting money from users via ransomware; or interrupting normal business processes.

The field is significant due to the expanded reliance on computer systems, the Internet,[3] and wireless network standards such as Bluetooth and Wi-Fi. Also, due to the growth of smart devices, including smartphones, televisions, and the various devices that constitute the Internet of things (IoT). Cybersecurity is one of the most significant challenges of the contemporary world, due to both the complexity of information systems and the societies they support. Security is of especially high importance for systems that govern large-scale systems with far-reaching physical effects, such as power distribution, elections, and finance.

The following are the cybersecurity challenges faced in the digital era.

- **Evolving Threat Landscape:**

The digital era has ushered in a new era of threats. Traditional attacks like viruses and worms have given way to more sophisticated threats such as ransomware, advanced persistent threats (APTs), and zero-day vulnerabilities. Attackers constantly adapt their tactics, techniques, and procedures, making it imperative for organizations to stay ahead of the curve.

- **Proliferation of IoT Devices:**

The Internet of Things (IoT) has revolutionized industries, from smart homes to industrial automation. However, the proliferation of IoT devices has introduced a vast attack surface. Insecurely configured devices, lack of updates, and weak authentication mechanisms make them attractive targets for attackers aiming to breach networks or compromise privacy.

- **Insider Threats:**

While external threats are a major concern, insider threats pose a unique challenge. Malicious or negligent actions by employees, contractors, or partners can lead to data breaches or system disruptions. Balancing security measures with the need to maintain a collaborative and open environment is a complex endeavor.

- **Cloud Security:**

The shift to cloud computing offers scalability and flexibility, but it also raises security questions. Organizations must manage data stored across diverse cloud environments, ensuring proper encryption, access controls, and compliance. Shared responsibility models between cloud providers and customers further complicate the security landscape.

- **Data Privacy and Compliance:**

The digital era has prompted increased scrutiny of data privacy and protection. Regulations like the General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA) impose strict requirements on how personal data is handled. Balancing data utilization with privacy concerns remains a continuous challenge.

- **Cyber Warfare and Nation-State Threats:**

Geopolitical tensions have spilled into cyberspace, with nation-states engaging in cyber warfare. These threats can disrupt critical infrastructure, steal sensitive information, or even manipulate public opinion. Attribution is often difficult, blurring the lines between criminal activity and state-sponsored attacks.

- **Skills Shortage:**

As the complexity of cybersecurity challenges increases, there's a growing shortage of skilled professionals to counter these threats. Organizations struggle to find and retain qualified experts capable of understanding the evolving threat landscape and implementing effective defenses.

- **User Awareness and Education:**

Despite technological advancements, human error remains a significant factor in cybersecurity incidents. Phishing attacks, social engineering, and other manipulation tactics target users who are often the weakest link in the security chain. Raising awareness and providing ongoing education are critical to reducing these risks.

- **Phishing Attacks:**

A phishing attack is a type of social engineering attack that targets users' login details and credit card information. In contrast to ransomware, here the information benefits the hacker. Gmail is a Google service that is used across the board for almost everything from business to personal purposes.

Now, whenever you open your mail account, you might come across a spam folder that consists of emails that the platform recognizes as a threat to your data security.

These spam emails consist of thousands of phishing attacks that your mailing partner recognizes and warns you about the potential cyber threat that it carries. Yet, some of the communications still make it to your inbox where you might fall into a trap.

Officially, Google released a statement of how it blocks more than 100 million phishing emails on an everyday basis. It further emphasized how most of the communications were trying to impersonate government officials, authorities, agencies, or websites in order to sound more reliable to mail recipients.

- **Sophisticated Cyber Threats:**

The digital era has ushered in a new breed of cyber threats that are relentless and highly sophisticated. From nation-state actors to organized criminal groups, adversaries leverage cutting-edge techniques like zero-day exploits and advanced persistent threats to breach systems, compromise data, and disrupt critical infrastructure.

- **Data Privacy and Compliance:**

The colossal amount of data generated and exchanged daily underscores the importance of data privacy and compliance. Striking a delicate balance between data utilization and safeguarding individual privacy remains a formidable challenge.

Stringent regulations like GDPR and CCPA compel organizations to adopt robust data protection measures or face substantial penalties.

- **IoT and Connected Devices:**

The proliferation of Internet of Things (IoT) devices has enriched our lives with convenience and automation. However, it has also opened avenues for cyberattacks. Inadequately secured IoT devices can serve as gateways for unauthorized access and potentially become part of botnets used in large-scale attacks.

- **Ransomware and Extortion:**

The rise of ransomware attacks epitomizes the financial motivations driving cybercriminals. Ransomware not only encrypts critical data but also threatens to leak it if the ransom is not paid. As organizations grapple with the dilemma of whether to comply with demands, the importance of robust backup strategies and incident response plans is underscored.

- **Supply Chain Vulnerabilities:**

In an interconnected digital ecosystem, the security of an organization is only as strong as its weakest link. Cybercriminals often target the supply chain to breach well-defended networks indirectly.

Verifying the security posture of vendors and third-party partners becomes crucial to prevent a cascading compromise.

- **Human Factor:**

Despite technological advancements, human errors and social engineering attacks remain potent threats. Phishing, spear-phishing, and other manipulation tactics exploit psychological vulnerabilities to gain unauthorized access to systems or sensitive information. Comprehensive cybersecurity training and awareness programs are vital to mitigate this risk.

- **Emerging Technologies and Security:**

As emerging technologies like artificial intelligence, quantum computing, and 5G networks mature, they introduce both opportunities and risks. Adapting existing cybersecurity measures to secure these technologies and anticipating new threat vectors they might introduce pose unique challenges.

- **Global Collaboration and Legislation:**

The borderless nature of cyberspace necessitates global collaboration to combat cyber threats effectively. Developing international norms and treaties for cybersecurity while respecting diverse legal systems and geopolitical interests remains a complex endeavor.

- **Security vs. Convenience:**

Striking a balance between robust security measures and user convenience is an ongoing challenge. Complex authentication processes can deter users, while lax security measures expose systems to breaches. Innovations like biometric authentication and adaptive security protocols aim to address this challenge.

- **Cybersecurity Workforce Shortage:**

The demand for skilled cybersecurity professionals far outpaces the available talent pool. Bridging this gap requires concerted efforts in ed.

Conclusion:

In the digital era, cybersecurity challenges are intricate and multifaceted. As technology continues to advance, so too must our strategies for protecting digital assets, privacy, and critical systems. By acknowledging these challenges and embracing a proactive, adaptive mindset, we can build a more secure digital future for all. human error, lack of training, unwarranted attacks have been challenges that will continue to trouble cybersecurity experts. It is the role of users, cybersecurity experts alongside platform owners to exercise vigilance towards the challenges facing cyber. As the Internet is booming worldwide these issues re increasing rapidly. The needs and involvement of every individual have different responsibilities to make a strong security system. The government should be involved to make sure that law enforcement achieves and take the time to evaluate security systems, such as military forces.

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Arka JAIN University

Arka JAIN University is a top East Indian university and the first private university in Kolhan. The fastest-growing private university in Jharkhand is AJU. The JHARKHAND State Legislature founded the university in 2017 under "The ARKA JAIN University Act". UGC, AICTE (for appropriate programs), and other statutory authorities and government agencies recognize it. Since 2011, JAIN College has offered diploma, undergraduate, postgraduate, and doctoral degrees, carving out a space for itself. JAIN (Deemed-to-Be-University), Bengaluru, an NAAC A++ and NIRF Top-100 HEI, mentors the University, which is part of the JGI Group Bengaluru. The University is ISO 21001:2018 "Educational Organization Management System" certified. Outlook-ICARE India's Top Universities Rankings 2022 placed the University fifth in the "Top-15 Emerging Private Universities" category. Higher Education Review Magazine ranked the University 14th in the Top-100 Engineering Survey 2022 and 15th in the Top-100 Beyond IIMs B-School Survey 2022. The Outlook ICARE India MBA Rankings 2023 placed our MBA program 10th (Top Private MBA Institutions – East Zone Category). The Outlook ICARE India MBA Rankings 2023 placed our MBA program 36th (Private University – Constituent Colleges Category). State-of-the-art Our hallmarks are infrastructure and credible placement support. We offer unique experience learning due to our vibrant campus life and community extension activities. Quality and research-based teaching-learning helps students adapt to industry needs.



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