

A Study on Financial Literacy Among the Students of Mumbai University

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Abstract— We are taught to worship money in the name of the Goddess LAXMI but we are not taught to make use of money. Understanding, analysing, and interpreting the abilities required to handle money well and make sound financial decisions in order to comprehend how to accumulate wealth and stay out of debt are all parts of financial literacy. In order to assure a path toward reducing debt, accumulating wealth, and generating a sustainable income to live on, it is important to have a basic understanding of inflation and interest rates as well as how to save money and why. Financial literacy is gaining importance due to its importance in making financial decisions. Everyone needs to use money effectively, whether they are wealthy or not. The present study is to understand the financial literacy level among the youngsters. Since children today are the future, the goal of the current study is to gauge their level of financial literacy.

Keywords— *Financial Literacy, Students of Mumbai University, University Students*

I. INTRODUCTION

Financial literacy is the knowledge of and competence with various financial abilities, including investing, budgeting, and personal financial management. The relationship of money's lifelong journey with us is the essence of financial literacy. The sooner you start, the better you will be able to handle your financial goal since literacy is the key to success when it comes to money management. The demand for digital currency has increased as a result of digitization. Knowing a lot about the financial product aids in adjusting to the passage of time. According to Vittet al. (2000) Today's financial world is highly complex as compared to 40 years ago financial products.

Financial Literacy in India: - The financial sector is expanding at an 8% annual rate and accounts for 7.1% of India's GDP. While the financial sector is seeing strong growth, the level of financial literacy is not keeping pace with this expansion. Despite having a population of 1.3 billion, just 26% of adults aged 25 to 44 have financial literacy, significantly behind Norway (71%), Denmark (71%), Sweden (71%), Israel (68%), Canada (68%), and the UK (67%). In the adult population worldwide, only one-third are financially literate, according to an S&P and World Bank assessment. The need for financial literacy would continue to grow because individuals are expected to become more self-reliant (The Adult Financial Literacy Advisory Group, 2008). If youngsters between the ages of 10 and 19 are also provided with adequate financial education, the rate may rise by more than 20% over the next twenty years. In India, this group comprises around 21.8% of the total population.

Financial ignorance can result in several dangers, including a higher likelihood of building up debt loads that are too high owing to poor spending habits or a lack of long-term planning. Bad credit, bankruptcy, house foreclosure, and other unfavorable results may follow as a result. India's financially diverse industry is rapidly growing, with both new market entrants and established financial services companies seeing significant development. The industry includes commercial banks, insurance firms, non-banking financial institutions, co-ops, pension funds, mutual funds, and other smaller financial organisation.

II. LITERATURE REVIEW

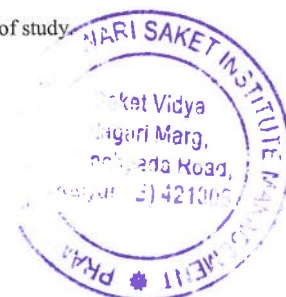
Singhal & Singh (2020) Show how numerous characteristics, including age, gender, education, income, marital status, and other demographic and socioeconomic

Kadoya & Khan (2020) Demonstrate how social learning, customer socialisation, and psychological learning theories may be used to explain a range of demographic, socioeconomic, and psychological characteristics. They contend that factors influencing financial literacy in Japan include demographic ones like gender, age, and education as well as socioeconomic ones like income and occupation and psychological ones like future aspirations.

National Centre for Financial Education report, 2015 & Financial Literacy and Inclusion in India Survey Report, 2019 – Claims that the rate of financial literacy varies with age. However, they discovered that although financial literacy is 30% for those between the ages of 18 and 29, it is only 28% for those between the ages of 70 and 80. This demonstrates that children have a greater desire to study when they are younger..

III. OBJECTIVES OF STUDY

1. To research the level of financial literacy among the students of Mumbai University.
2. To investigate the relationship between the levels of financial literacy of students based on their year of study.
3. To assess students' knowledge on various financial services and products available in the market.



IV. HYPOTHESIS

- H1: There is no significant difference in the levels of financial literacy among students based on their field of study.
H0: There is a significant difference in the levels of financial literacy among students based on their field of study.
H1: There are no significant differences in the levels of financial literacy of students based on their year of study.
H0: There are no significant differences in the levels of financial literacy of students based on their year of study.
H1: There is no significant difference in the levels of knowledge on various financial services and products available in the market.
H0: There is a significant difference in the levels of knowledge on various financial services and products available in the market.

V. SCOPE OF STUDY

The study covers students of Mumbai universities. A sample size of 70-degree college students were selected using a probabilistic approach and used for this particular study. The study is limited by the inability to cover Mumbai University only

VI. RESEARCH METHODOLOGY OF STUDY

Sample and Sample Size: - A Sample of 70 Students are being used.

Sources of the Data: - Most of the data has been collected with the help of primary sources i.e. interviewing 70 respondents by taking the help of google Forms.

Analysis of the Data: - Tabular and graphical analysis has been done.

Limitation of the Study: - This research study is restricted only to students of 4 to 5 colleges due to time constraint. This research study is only restricted to the students of Mumbai university due to time constraints.

Research Methodology

The scope of the study includes insurance and investment planning in working individuals. The research consists of primary data and secondary data. Primary data was collected through a survey using a structured online questionnaire. The questionnaire was a self-administered Google form. These Google forms were distributed via WhatsApp & email. The questionnaire consisted of 3 sections; the socio-demographic section consists of 5 questions, the insurance planning section consists of 7 questions and the investment planning section consists of 4 questions. The area of data collection was Goa. A questionnaire was shared with 200 working individuals and responses were received from 160 working individuals. The sampling method used was convenience sampling. After primary data collection was complete google forms, excel & SPSS were used as tools for data analysis. Secondary data was collected through a literature review of articles, journals, books & websites

VII. DATA ANALYSIS AND FINDINGS

Table no: 1

Class	No of Respondent
Final Year Students	75
Second Year Students	18
First Year Students	33
Total	126

(Source:- Field Work)

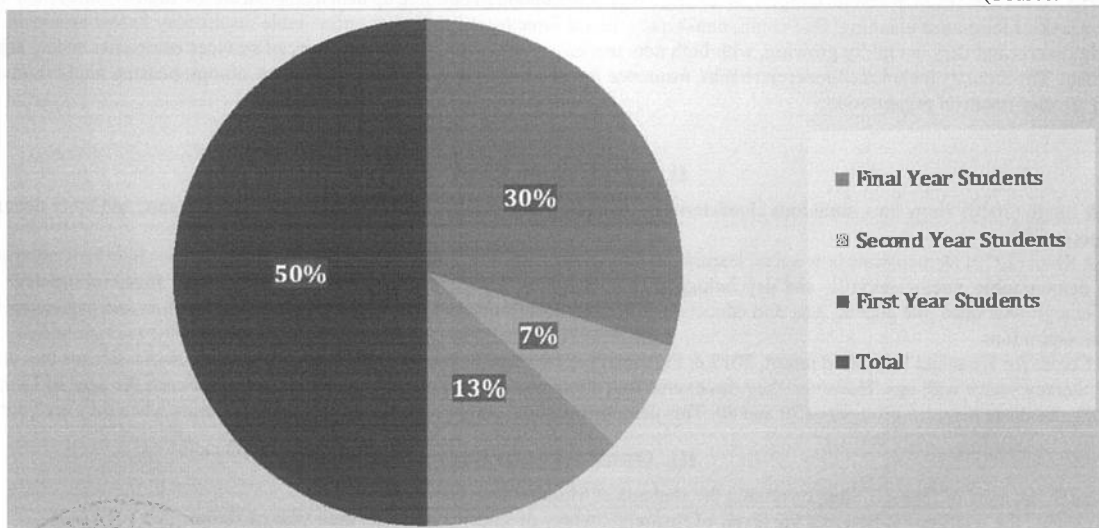


Diagram no 1

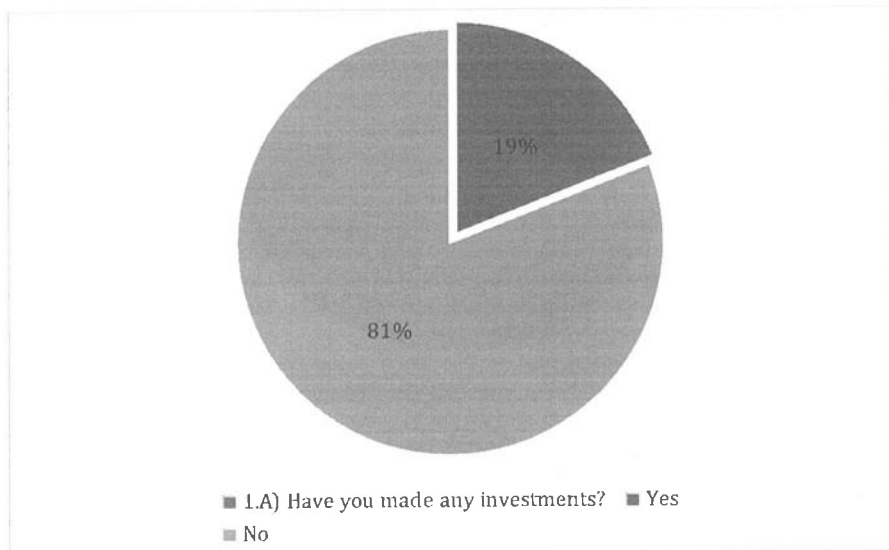


Diagram No. 3

Interpretation: - Out of 126 respondents, 19 % i.e.,24 respondents have not made any investment.

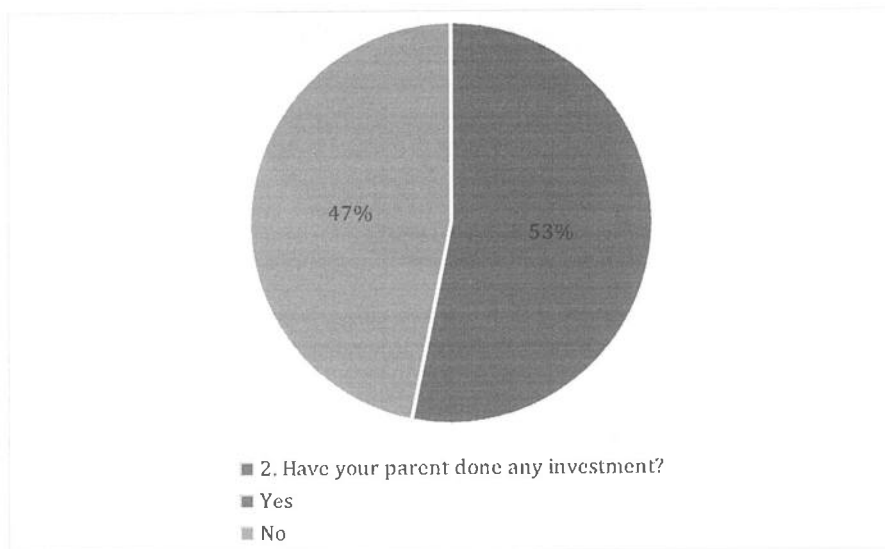


Diagram No. 4

Interpretation: - Out of 126 respondents, 47 % i.e.,60 respondents say that their parent have not done any investment.



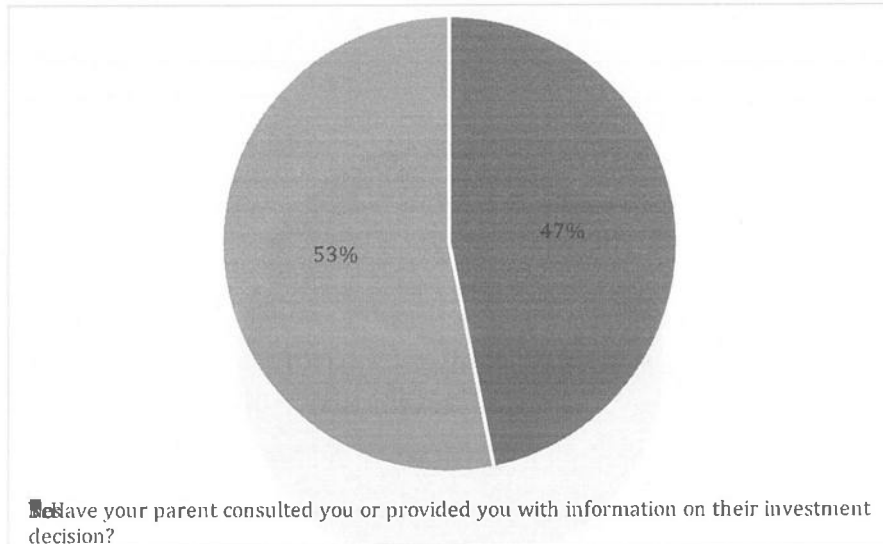


Diagram No. 5

Interpretation: - Out of 126 respondents, 47 % i.e.,67 respondents say parents have not consulted them or try to gain any information before doing any investment decision.

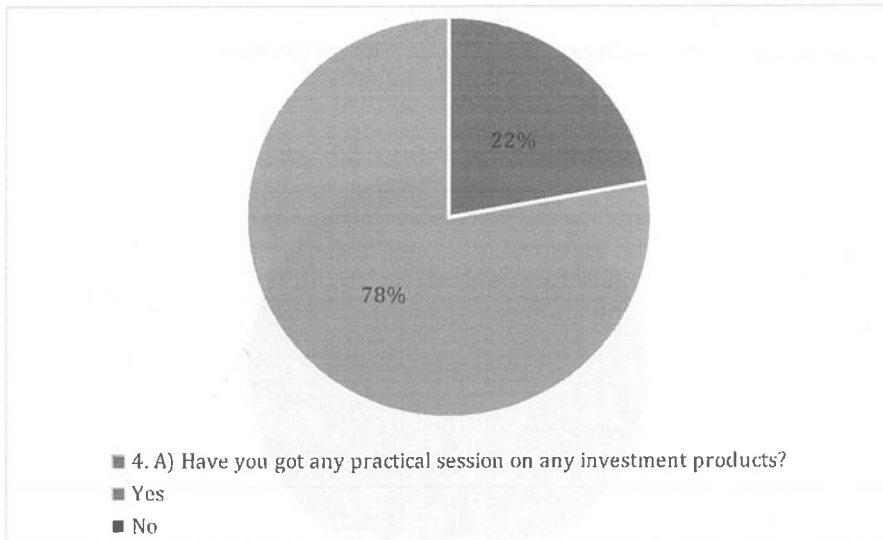


Diagram No. 6

Interpretation: - Out of 126 respondents, 22 % i.e.,98 respondents have not got any practical session on any investment products.



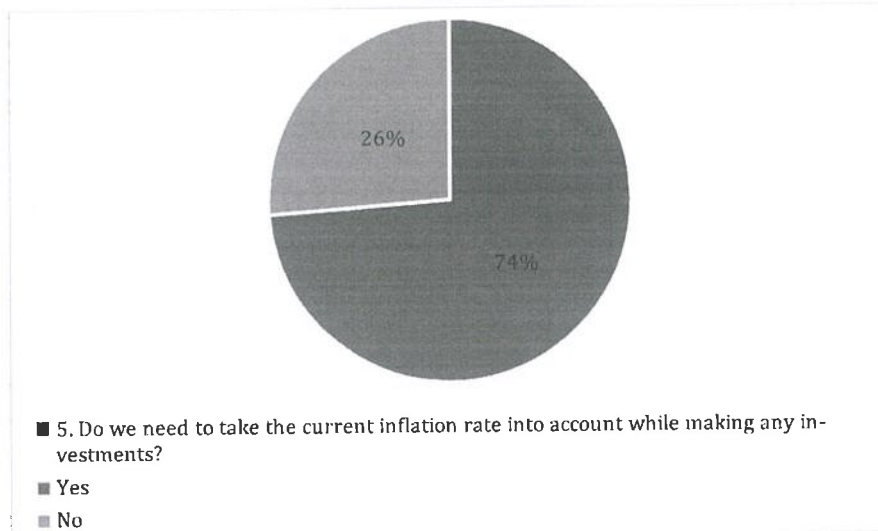


Diagram No. 7

Interpretation: - Out of 126 respondents, 26 % i.e.,93 respondents responded that they need to take the current inflation rate into account while making any investments decision.

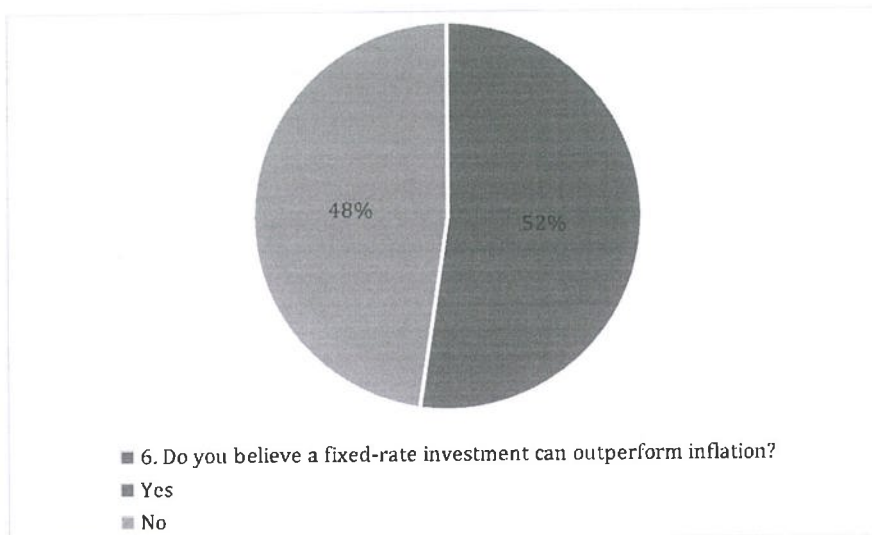


Diagram No. 8

Interpretation: - Out of 126 respondents, 48 % i.e.,61 respondents believe that a fixed rate investment can outperform inflation.

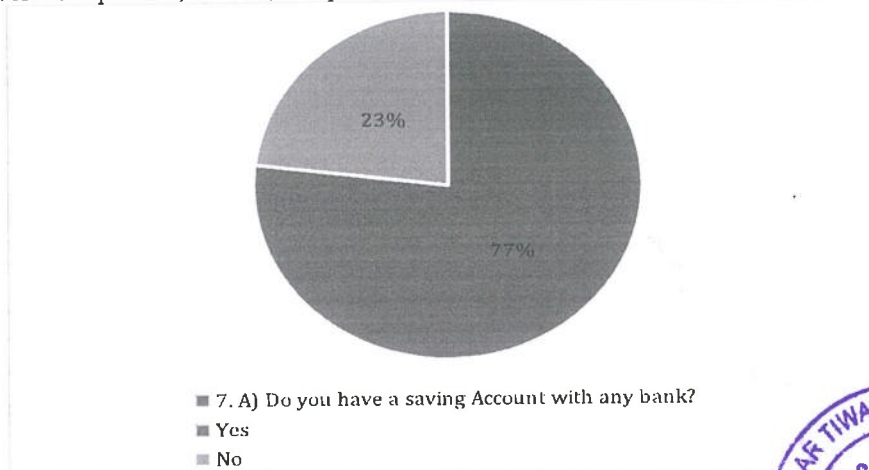


Diagram No. 9

Interpretation: - Out of 126 respondents, 23 % i.e.,29 respondents don't have a saving account.

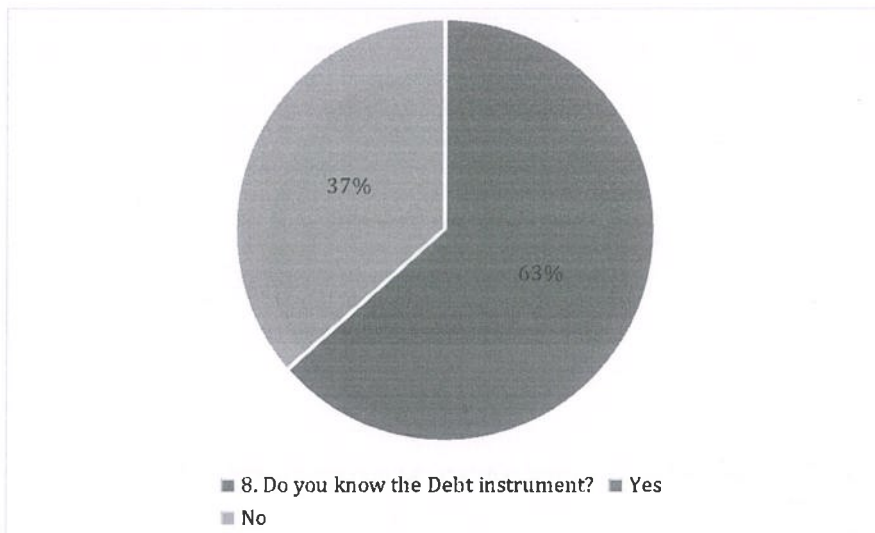


Diagram No. 10

Interpretation: - Out of 126 respondents, 37 % i.e.,47 respondents don't know the debt instruments.

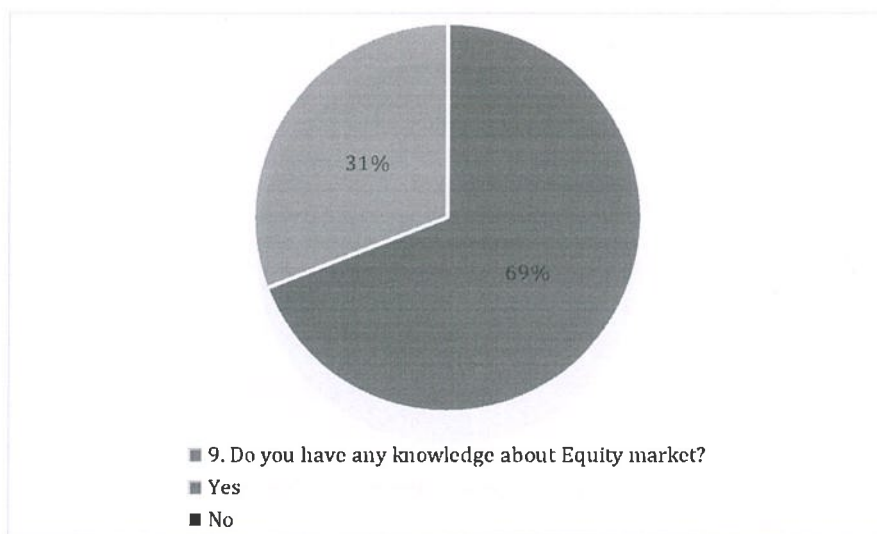


Diagram No.11

Interpretation: - Out of 126 respondents, 31 % i.e.,39 respondents do not have any knowledge about equity markets.



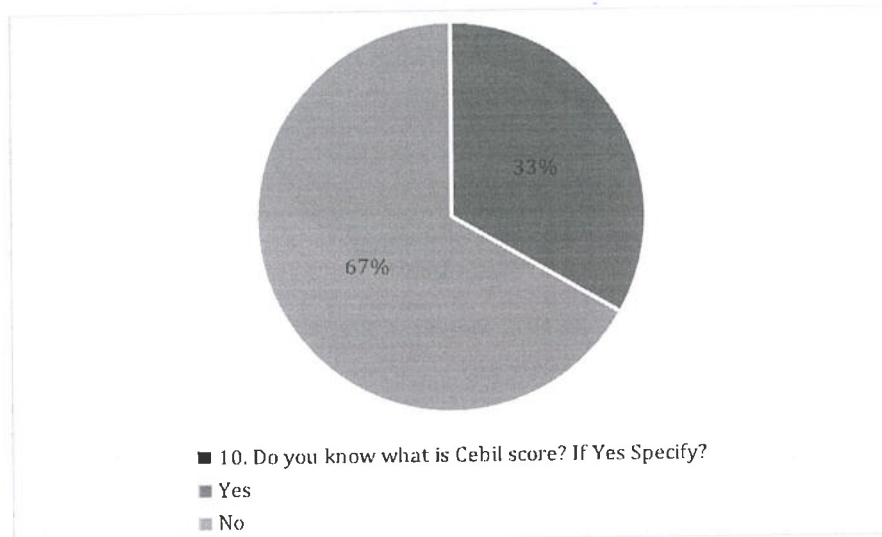


Diagram No. 12

Interpretation: - Out of 126 respondents, 67 % i.e.,84 respondents don't know what is CIBIL score.

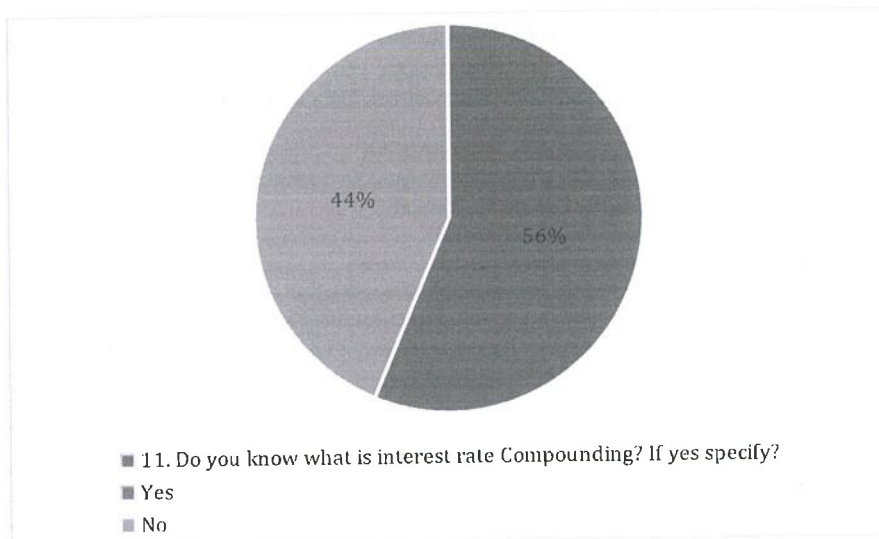


Diagram No. 13

Interpretation: - Out of 126 respondents, 44 % i.e.,55 respondents do not know what is interest rate compounding

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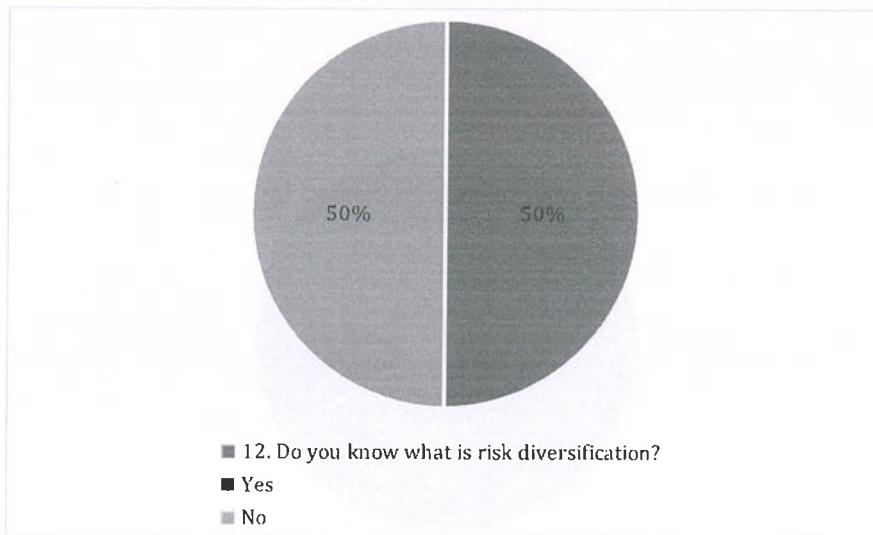


Diagram No. 14

Interpretation: - Out of 126 respondents, 50 % i.e.,63 respondents say they don't know about risk diversification.

Suggestions: - Following are the various suggestions based on the research study: -

1. Students at college should be aware of their money, credit card debt, savings, and ambitions, but they need also know how to build wealth and stay away from unmanageable debt.
2. More of Practical Session should be conducted about financial products.

VIII. CONCLUSION

It starts with the young generation as there are the pillar of the future India. More the Financial Literacy among the students can be life-changing for them and for the country. A nation with financially secure citizens has a strong economy.

IX. REFERENCES

- [1] India's Growing Financial Literacy | IBEF – <https://www.ibef.org/blogs/india-s-growing-financial-literacy>.
- [2] The Young Adult's Guide to Financial Success By Edward M. Wolpert
- [3] The Intelligent Investor By Benjamin Graham
- [4] How to Budget & Manage Your Money By Rachel Mercer
- [5] Financial literacy to financial planning by Dr. Purvi Kothari and Mr. Keyur Mehta
- [6] The Adult Financial Literacy Advisory Group, 2008- Adult Financial Capability Framework.
- [7] The Financial Literacy Problem in The United States — Financial Literacy Club ng, M., & Wei, K. (2009). An Empirical Analysis of Personal Financial Planning in an Emerging Economy.



A handwritten signature in blue ink, appearing to read 'Pramod Ram Ujagar Tiwari'.

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A STUDY ON INVESTOR'S PERCEPTION TOWARDS INVESTMENT IN DERIVATIVES MARKET

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- Abstract:

Recent years have seen a considerable increase in the derivatives industry, giving investors new investment opportunities. Investors' perceptions and decision-making may be impacted by their lack of understanding of the dangers and advantages of investing in derivatives. This "Research Paper" investigates how investors see investing in the derivatives market and finds the variables that affect their choices.

- Introduction

Derivatives:

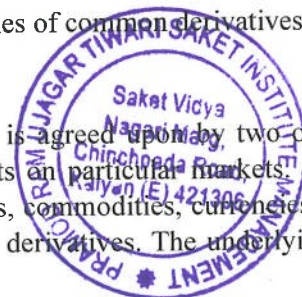
A financial contract type whose value is based on an underlying asset, group of assets, or benchmark is referred to as a "derivative." A derivative is agreed upon by two or more parties who can trade it over-the-counter (OTC) or on an exchange.

These contracts have their own risks and can be used to trade a wide range of assets. Derivative prices are based on changes in the underlying asset. These financial instruments can be traded to reduce risk and are frequently used to get access to specific markets. Using derivatives can be used to either assume risk with the hope of receiving a similar reward (speculation) or to mitigate risk (hedging). The risk-averse can transfer risk (and the associated profits) to the risk-takers using derivatives.

Key Takeaways:

- Financial contracts known as derivatives are those entered into by two or more parties and whose value is derived from an underlying asset, collection of assets, or benchmark.
- A derivative may be traded over-the-counter or on an exchange.
- Derivative prices are based on changes in the underlying asset.
- Typically leveraged instruments, derivatives have higher potential risks and returns.
- Futures contracts, forwards, options, and swaps are examples of common derivatives.

A complicated form of financial security known as a derivative is agreed upon by two or more parties. Derivatives are a tool that traders use to trade a variety of assets on particular markets. Derivatives are frequently seen as a type of sophisticated investing. Stocks, bonds, commodities, currencies, interest rates, and market indices are the most often used underlying assets for derivatives. The underlying asset's price movements determine how much a contract is worth.



Derivatives can be used to leverage holdings, speculate on the direction of an underlying asset's movement, and hedge a position. These assets are frequently purchased through brokerages and exchanged on exchanges or OTC. One of the biggest derivatives markets in the world is the Chicago Mercantile Exchange (CME).

It's crucial to keep in mind that when businesses hedge, they aren't betting on the commodity's price. The hedge only serves as a means for each party to control risk. Each party's profit or margin is factored into the price, and the hedge works to prevent those gains from being lost due to fluctuations in the commodity's price.

OTC-traded derivatives typically have a higher counterparty risk, or the chance that one of the parties to the transaction could go out of business. These uncontrolled transactions take place between two private parties. The investor could buy a currency derivative to lock in a particular exchange rate in order to mitigate this risk. Currency futures and currency swaps are two derivatives that could be used to manage this type of risk.

Types of Derivatives:

Today's derivatives are based on a wide range of transactions and have a lot more applications. Even derivatives based on weather information, such how much rain fell or how many days had sunshine, exist.

Derivatives come in a wide variety of forms that can be applied to risk management, speculation, and position leverage. With products that may accommodate almost every requirement or risk tolerance, the derivatives market is one that is still expanding.

Derivative items fall into two categories: "lock" and "option." Lock products (such as futures, forwards, or swaps) obligate the parties to the terms of the contract from the beginning. On the other hand, option products (such as stock options) give the holder the right but not the responsibility to acquire or sell the underlying asset or security at a particular price on or before the option's expiration date. Futures, forwards, swaps, and options are the four most popular types of derivatives

- Futures:

An agreement between two parties for the purchase and delivery of an asset at a certain price at a later time is known as a futures contract, or simply a futures. Standardised contracts known as futures are traded on an exchange. A futures contract is used by traders to manage risk or make predictions about the value of an underlying asset. The parties are required to carry out an agreement to purchase or sell the underlying asset.

For example, say that on Nov. 6, 2021, Company A buys a futures contract for oil at a price of \$62.22 per barrel that expires Dec. 19, 2021. The company does this because it needs oil in December and is concerned that the price will rise before the company needs to buy. Buying an oil futures contract hedges the company's risk because the seller is obligated to deliver oil to Company A for \$62.22 per barrel once the contract expires. Assume oil prices rise to \$80 per barrel by Dec. 19, 2021. Company A can accept delivery of the oil from the seller of the futures contract, but if it no longer needs the oil, it can also sell the contract before expiration and keep the profits.

In this instance, the buyer and seller of futures both insure against risk. Company A required oil in the future and intended to take a long position in an oil futures contract to reduce the chance that the price would increase in December. An oil business that was concerned about declining oil prices and sought to reduce that risk by selling or shorting a futures contract that set the price get in December may be the seller.

It's also feasible that one, both, or neither of the participants are traders with opposing views on how December oil will move. In that situation, the contract may favour one party or not. Consider the 1,000-barrel oil futures contract for West Texas Intermediate (WTI) oil that is traded on the CME. The trader who held the long position—the buyer—in the futures contract would have made \$17,780 in profit if the price of oil increased from \$62.22 to \$80 per barrel [$(\$80 - \$62.22) \times 1,000 = \$17,780$]. A loss of \$17,780 would be incurred by the trader who held the short position in the contract, or the seller.

Cash Settlements of Futures-

Not all futures contracts have their underlying asset delivered in order to settle them at expiration. It is improbable that either of the speculating investors or traders who are both parties to a futures contract would desire to arrange for the delivery of several barrels of crude oil. By closing (unwinding) their contract prior to expiration with an offsetting contract, traders can terminate their obligation to buy or deliver the underlying commodity.

In fact, a lot of derivatives are cash-settled, which implies that any profit or loss from the trade is just a cash flow into the trader's brokerage account for accounting purposes. Many interest rate futures, stock index futures, and more exotic instruments like volatility futures or weather futures are among the futures contracts with cash settlements.

- Forward:

Although forward contracts, often known as forwards, and futures, do not trade on exchanges. There is no over-the-counter trading for these contracts. The buyer and seller have the option to alter the terms, size, and settlement procedure when creating a forward contract. Forward contracts have higher counterparty risk for both parties because they are OTC items.

A type of credit risk, counterparty risks involve the possibility that the parties may be unable to fulfil their contractual obligations. The other party may be left with no options and risk losing the value of its position if one party becomes bankrupt.

Once a forward contract is established, the parties can trade off their positions with other counterparties, which raises the possibility of counterparty risk as more traders participate in the same contract.

- Swaps:

Another popular class of derivative, swaps are frequently utilised to convert one sort of cash flow into another. An interest rate swap, for instance, could be used by a trader to change from a variable interest rate loan to a fixed interest rate loan or the other way around.

Consider a scenario where Company XYZ borrows \$1,000,000 at a variable interest rate of 6%. XYZ may worry that rising interest rates will drive up the cost of this loan or run into lenders who are hesitant to give the company further credit while it is exposed to the danger of a variable rate.

Assume that XYZ enters into a swap with Company QRS, which is willing to trade the variable-rate loan payments for the payments on a 7% fixed-rate loan. As a result, XYZ will pay QRS 7% interest on its

\$1,000,000 principal while receiving 6% interest from QRS. XYZ will only pay QRS the 1 percentage point difference between the two swap rates at the start of the trade.

Company XYZ will be required to pay Company QRS the 2 percentage point difference on the loan if interest rates decline to the point where the variable rate on the first loan is now 5%. If interest rates increase to 8%, QRS would be required to pay XYZ the 1% difference in the two swap rates. The swap has accomplished XYZ's initial goal of changing a variable-rate loan into a fixed-rate loan, regardless of how interest rates vary.

Swaps can be created to swap cash flows from other business activities, loan default risk, and currency exchange rate risk. A very common type of derivative is one that deals with the cash flows and probable defaults of mortgage bonds. In the past, they've actually been a little too popular. This type of swap's counterparty risk ultimately contributed to the 2008 credit crisis.



- Options:

In that it is an agreement between two parties to buy or sell an asset at a fixed future date for a specific price, an options contract is comparable to a futures contract. Options and futures differ primarily in that with an option, the buyer is not required to carry out their commitment to buy or sell. It is merely an opportunity, not a commitment like futures. Options, like futures, can be used to speculate or hedge against changes in the price of the underlying asset.

Assume a shareholder has 100 shares of a stock with a \$50 per share market value. They think the stock will eventually appreciate in value. However, this investor chooses to use an option to hedge their position since they are worried about potential hazards. The investor may decide to purchase a put option, which grants them the right to sell 100 shares of the underlying company for \$50 each (known as the striking price) until a particular point in the future (known as the expiration date).

Let's say that by the time the put option expires, the stock has dropped to \$40 per share and the buyer of the put chooses to exercise the option by selling the stock at the \$50 per share original strike price. Because the strike price was the same as the stock price when the investor first bought the put, if the put option cost them \$200 to purchase, they just lost the cost of the option. Because it protects against the stock's potential decline, a strategy like this is known as a protective put.

Alternatively, suppose a shareholder doesn't possess the \$50-per- share shares. They anticipate a rise in its worth during the coming month. A call option might be purchased by this investor, entitling them to purchase the shares for \$50 either before or at expiration. Assume that the price increased to \$60 before expiration and that this call option cost \$200. The buyer can now exercise their option and purchase a share of stock worth \$60 for the \$50 strike price, making a \$10 per share initial profit. The true profit is \$1,000 after deducting the option's premium and any brokerage commission costs as a call option represents 100 shares.

In both cases, if the purchasers decide to use the contract, the sellers must carry out their end of the bargain. The put, however, will be worthless if the stock price is higher than the strike price at expiration, and the seller (the option writer) keeps the premium as the option expires. The call will be worthless and the call seller will pocket the premium if the stock's price is lower than the strike price at expiration.

Pros and Cons of Derivatives:

Pros-

Derivatives can be a helpful tool for both businesses and investors, as the aforementioned instances show.

They offer a means of performing the following:

- Fixed prices
- Protect yourself from unfavourable rate changes
- Reduce hazards
- These benefits frequently have a low price tag.

Additionally, traders can frequently buy derivatives on margin, which entails borrowing money. Due to this, they are even more affordable.

Cons-

Because they are based on the value of another asset, derivatives are challenging to value. OTC derivatives are subject to counterparty risks, which are challenging to estimate or value.

The majority of derivatives are also susceptible to:

- Alterations in the remaining time before expiration
- Interest rates
- The cost of holding the underlying asset

It is challenging to properly match the value of a derivative with the underlying asset due to these variables.

The derivative is susceptible to market emotion and market risk since it lacks an intrinsic value and derives all of its value from the underlying asset. Regardless of what is happening with the price of the underlying asset, supply and demand factors may cause a derivative's price and its liquidity to rise and fall.

Last but not least, derivatives are frequently leveraged instruments, and leverage has drawbacks. It can raise the pace of return, but it can also hasten the accumulation of losses.

Population and Sample

This research can be categorised as a descriptive research based on the study's purpose. A population's or phenomenon's characteristics are described through descriptive research. In this context, the study's goal is to learn more about how investors see investing in the derivatives market, with a focus on how well they understand the market and how they perceive risk. The purpose of the study is to identify the variables that affect investors' decisions, the perceived advantages and disadvantages of investing in derivatives, and any potential effects that these perceptions may have on the development and sustainability of the derivatives market. Surveys, interviews, and other techniques will be used to gather information for the study to describe investors' attitudes and actions in the derivatives market.

Primary data collection:

Through Questionnaire filled by respondents.

Secondary data collection:

Data collection through various sources such as academic journals, industry reports, and online databases.

Scope of the study:

The scope of this study is focused on understanding the perceptions of investors towards investing in the derivatives market, with a particular emphasis on their understanding of the market, their risk perception, and their decision-making factors.

The study will cover a broad range of topics, including the following:

- Understanding of derivatives market: The study will examine investors' understanding of the mechanics and risks associated with investing in derivatives.
- Decision-making factors: The study will identify the factors that influence investor decision-making when it comes to investing in derivatives.
- Perceived benefits and drawbacks: The study will evaluate the perceived benefits and drawbacks of investing in derivatives from the perspective of investors.
- Education and awareness initiatives: The study will examine the role of education and awareness initiatives in shaping investor perceptions and decision-making.
- Impact on the market: The study will analyze the potential impact of investor perceptions on the growth and sustainability of the derivatives market.
- Limitations of the Study:

The possibility of sample bias and the possibility of evolving investor attitudes. But the study's primary goal is to offer insightful information about how investors view investing in the derivatives market. With this information, regulatory policies, marketing plans, and educational initiatives could be developed to ensure a healthy, sustainable derivatives market that satisfies investor needs.



- DATA INTERPRETATION

1. What's your Occupation?

The distribution of respondents according to their employment position is shown in the pie chart. Out of all the respondents, 57.10% were enrolled in school, 42.90% had jobs, and 0.00% were independent contractors. This shows that the respondents were primarily students, then hired people, and there were no respondents who were self-employed.

2. Have you ever invested in the derivatives market?

When asked if they had ever invested in the futures market, only 28.60% of respondents said "Yes," while 71.40% responded "No," claiming they had never done so. The majority of respondents, it would appear, have not made any investments in the derivatives market.

3. Do you understand how the derivatives market works?

Twenty percent of all respondents said "Yes, very well," indicating they have a solid grasp of the derivatives market. 80.00% of respondents said they understood it "Somewhat," indicating they may still need more information or clarification. No one who responded to the survey said "No, not at all." This may indicate that the vast majority of respondents had some knowledge of the derivatives market.

4. How would you rate your knowledge of the derivatives market?

Out of all the respondents, 0.00% considered themselves as "Expert," 42.90% considered themselves as "Intermediate," and 57.10% considered themselves as "Beginner." This suggests that the majority of the respondents considered themselves as beginners in terms of their knowledge of the derivatives market.

5. Do you feel that you have enough information to make informed decisions about investing in derivatives?

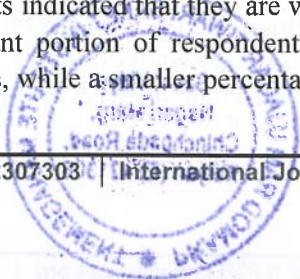
Out of all the respondents, 100.00% answered "No," indicating that they do not feel that they have enough information to make informed decisions about investing in derivatives, while 0.00% answered "Yes." This suggests that the respondents feel that they lack sufficient knowledge and information to make informed decisions about investing in derivatives.

6. What is your perception of the risk associated with investing in derivatives?

Out of all the respondents, 14.30% answered "Very High," indicating that they perceive the risk associated with investing in derivatives to be very high, while 42.90% answered "Somewhat High" and "Moderate," indicating that they perceive the risk to be moderately high. None of the respondents answered "Somewhat Low," indicating that none of them perceived the risk to be somewhat low. This suggests that a significant proportion of the respondents perceive the risk associated with investing in derivatives to be high or moderate.

7. How does your perception of the risk associated with investing in derivatives impact your investment decisions?

Out of all the respondents, 28.60% answered that they avoid derivatives altogether due to the perceived risk, while 57.10% answered that they are cautious but still invest in derivatives. Additionally, 14.30% of respondents indicated that they are willing to take on higher risk for the potential reward. This suggests that a significant portion of respondents are cautious about the perceived risk associated with investing in derivatives, while a smaller percentage are willing to take on higher risk for potential reward.



8. What are your main concerns when it comes to investing in derivatives?

Out of all the respondents, 71.40% answered "Market volatility," indicating that it is their main concern when investing in derivatives. 28.60% of the respondents answered "Lack of transparency," indicating that it is their main concern, while 0.00% of the respondents indicated "Counter party risk" or "Complexity of financial products" as their main concern. This suggests that the majority of the respondents are concerned about market volatility when investing in derivatives.

9. How important is the potential return on investment when deciding whether to invest in derivatives?

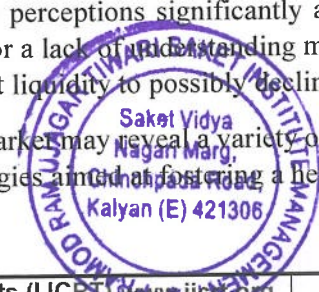
Out of all the respondents, 85.70% answered "Very Important," indicating that potential return on investment is very important to them when deciding whether to invest in derivatives. 14.30% answered "Somewhat Important," indicating that potential return on investment is somewhat important to them, while no respondents answered "Not Important." This suggests that potential return on investment is a key factor in the decision-making process for most respondents when it comes to investing in derivatives.

FACTS AND FINDINGS

Here are some probable facts and findings that could be discovered in a study on this issue: As the topic of investor's perception towards investing in derivatives market is broad and there can be diverse findings based on different research studies:

1. **Lack of Understanding:-**The study's key finding would be that investors generally have little knowledge of the derivatives market and the risks involved. Due to their lack of knowledge, investors may be reluctant to invest in derivatives as a result.
2. **Risk Perception:-**Investor perception of derivatives as high-risk investments may be another significant finding. The complexity of derivatives, the possibility of substantial losses, and the high level of leverage involved in some derivative transactions are just examples of the variables that might have an impact on this perception.
3. **Factors Influencing decision-making:-**When making investment selections in the derivatives market, investors may be influenced by a number of factors, including their risk tolerance, financial objectives, market conditions, and regulatory rules, the study may reveal.
4. **Perceived benefits and drawbacks:-**Investors may perceive both advantages and disadvantages related to investing in derivatives, according to the study. Benefits can include the capacity to diversify portfolios, insure against market risks, and possibly generate higher profits. On the other side, disadvantages can include some derivative transactions' high level of complexity, the possibility of sizable losses, and their lack of transparency.
5. **Role of Education and awareness initiatives:-**According to the report, investor views and decision-making are significantly shaped by education and awareness campaigns. Financial literacy programmes and regulatory standards are only two examples of initiatives that could assist investors comprehend the derivatives market and make wise investing choices.
6. **Impact on the Market:-**The study might discover that investor perceptions significantly affect the derivatives market's ability to grow and endure. Negative impressions or a lack of understanding may cause investor involvement to decline, trading volumes to decline, and market liquidity to possibly decline.

In general, research on how investors see investing in the derivatives market may reveal a variety of insights and conclusions that could guide regulatory actions and financial strategies aimed at fostering a healthy and sustainable derivatives market.



• CONCLUSION

The study on investors' perceptions of investing in the derivatives market emphasises how crucial it is to comprehend investors' actions and choices in this market. It has been discovered that important issues for investors when investing in derivatives include a lack of comprehension, a sense of risk, and numerous factors impacting decision-making.

The study also shows that investor perceptions have a big impact on the sustainability and growth of the derivatives market. Negative impressions or a lack of understanding may cause investor involvement to decline, trading volumes to decline, and market liquidity to possibly decline. On the other hand, additional activities for education and awareness could help investors understand the market better and possibly enhance participation, resulting in a market that is more alive and sustainable.

Regulatory measures and investing tactics that promote education, transparency, and risk mitigation could be put in place to address the issues presented by the study. This could comprise programmes to promote financial literacy, rules for regulations, and increased market transparency.

To guarantee a sustainable and well-functioning market that benefits both investors and the larger economy, the study emphasises the need for further research on investor attitudes and behaviour in the derivatives market.



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Financial Management Challenges and Impact for Successful Businesses

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ABSTRACT

The current state of the economy poses challenges to both the overall financial capabilities and the ability to handle finances on a few different levels. It is anticipated that associations would modify current requirements, emphasizing hazard management, financial administration, and estimating exercises. Due to obstacles in the corporate world, associations must generate additional funds. This study calculates the relationship between financial management practices such as working capital management, profit strategy, capital building decision, and financial performance evaluations in the Indian corporate sector with authoritative performance. The review's test group consisted of forty Indian companies that are registered at Delhi Stock Exchange and are involved in a variety of industries. Organizational financial investigators and money leaders responded to a poll based on references and organization profiles. Respondents self-managed the questionnaires in order to collect their information. The results demonstrate a strong and favourable relationship between financial management practices and hierarchical performance in Indian corporate settings.

Keywords: Financial Management, Profitability, Working Capital Organisational Performance, Corporate Sectors, Successful Businesses

1. INTRODUCTION

The core of business operations is still financial management, which has an impact on all aspects of an association's longevity and prosperity. Businesses encounter a plethora of financial challenges as they delve into the complexities of the cutting-edge economic landscape, which calls for astute management and crucial insight. These challenges include everything from fluctuating markets and economic weaknesses to constant financial requirements and administrative adjustments. The impact of effective financial management on corporate success is enormous, extending beyond mere survival to the attainment of sustainable growth and competitive advantage. In this special circumstance, organizations moving toward long-term success must comprehend and alleviate financial issues. This talk explores the intricate world of financial management issues, delving into their subtle effects on companies and highlighting the vital role that skillful financial practices play in fostering strength and success in the current, distinct business environment.

All else being equal, economic vulnerabilities provide a significant challenge to enterprises. Unstable financial conditions can arise from shifts in global economic events, monetary values, and economic situations. Investigating these weaknesses necessitates a cautious approach to risk management, financial planning, and adaptable strategies that enable companies to weather downturns and seize new opportunities.

Financial management becomes even more complex with administrative changes. To ensure legal adherence and sound financial standing, businesses should stay current on evolving guidelines, charge rules, and consistency principles. The ability to swiftly adapt to administrative changes is essential to avoiding penalties, damage to one's reputation, and disruptions to work.

Furthermore, the constant demand for money solves a test that organizations, particularly serious ones, face on a regular basis. Obtaining subsidies through various channels, improving capital design, and efficiently allocating resources to support operations and spur development initiatives are all components of viable financial management.

These financial challenges have a big impact on profitable companies. Inadequate money management can lead to problems with income, which can hinder daily activities and jeopardize one's ability to seize important opportunities. Moreover, companies who fail to investigate economic vulnerabilities may find themselves in a challenging situation when trying to grow and allocate resources toward long-term success.

On the other hand, companies that take proactive measures to resolve financial issues might turn them into beneficial opportunities. Effective financial management builds resilience, enabling organizations to withstand downturns in the economy, make well-informed investment decisions, and allocate resources decisively. Additionally, it establishes a foundation for viable growth, since companies with robust financial systems are better able to attract investors, obtain loans, and take advantage of market trends.

We delve into the intricate components that mold the financial landscape for organizations in this examination of financial management issues and their consequences. Through an understanding of these challenges and the adoption of persuasive financial management practices, companies may prepare their operations, identify areas of vulnerability, and put themselves in a position to thrive in a constantly changing business climate.

2. LITERATURE REVIEW

The relationship between financial management practices and the financial performance of the top 100 Small and Medium-Sized Enterprises (SMEs) in Kenya is examined in Isaac Kwame Addo's (2017) study. Disseminated within an official journal, the analysis provides insights into the critical role that financial management plays in SMEs' success. Addo looks into various financial management techniques and how they affect businesses' overall financial health. By providing observational evidence meant for the Kenyan context, the review enhances the work that is already written. By focusing on the leading SMEs, it provides important information to scholars and experts seeking a deeper understanding of the factors influencing financial success. For legislators and entrepreneurs aiming to enhance SMEs' financial management procedures, this study is particularly crucial.

The impact of Inside Corporate Social Obligation (CSR) on Kenya Business Bank's financial performance is examined by America Based and associates (2016). This study addresses the growing interest in the relationship between an organization's financial performance and its internal CSR initiatives. The investigation, which is published in a credible source, broadens the body of knowledge by examining the internal workings of corporate social responsibility and how they directly impact financial performance. The findings contribute to the ongoing discussion on the wider implications of corporate social responsibility. The research provides insights that might help various firms comprehend how internal CSR activities may affect their principal financial concern by specifically focusing on an undeniable financial base in Kenya. This article offers recommendations for companies looking to align their social responsibility efforts with profits.

"Poslovne finansije - CFIN, Beograd, Information status," a work by Besley and Brigham (2015), discusses a Serbian-language asset in the subject of corporate finance. The book is a condensed version of financial management guidelines tailored to the Serbian business environment, covering several aspects of corporate finance. Renowned experts in the area, the creators provide a comprehensive guide for practicing company finance. This asset is included despite not being a true exploration focus because of its role in bridging financial management concepts with the Serbian business community. It serves as a form of viewpoint for specialists, scholars, and understudies who are interested in learning about financial management practices in the Serbian corporate environment. The book most likely improves financial management education and application in the local context.

The study by Golda Akinyi Demba (2013) examines how Kenya Clinical Trade School (KMTTC) performance is impacted by financial management exercises. The investigation focuses on a specific organization and examines the ways in which decisions made about financial management affect the overall functioning of the institution. This paper, which was distributed through an unidentified source, provides insights on Kenya's medical services training sector and highlights the importance of prudent financial management. Even though the specific findings are not detailed here, this work likely

contributes to our understanding of the role that financial management plays in educational foundations, namely in the field of medical services preparation. The review may include recommendations for improving comparative foundations' financial processes in order to boost overall performance.

The 2014 book F. E. Brigham and J. F. Houston is a comprehensive resource for financial management. This course book, published by Cengage Realizing, is a comprehensive resource for academic contexts since it addresses key concepts related to financial management. The work of Brigham and Houston provides a thorough analysis of financial management principles, covering topics such as risk management, valuation, and financial preparedness. For students, instructors, and professionals seeking a thorough understanding of financial management theories and practical applications, this resource is essential.

The topic of bookkeeping and finance is expanded by Reinaldo and Dione's (2013) publication in "Revista Contabilidade and Finanças". Even though the article's exact topic isn't disclosed, it most likely will include research or first-hand accounts of financial management. The journal is read in the academic community, and entries within are typically subject to a close friend audit. Elaborating on the results is testing if there are no clear nuances regarding the content. However, papers in reputable journals such as "Revista Contabilidade and Finanças" are expected to make substantial contributions to the understanding of financial management exercises, maybe focusing on topics relevant to the Brazilian or global financial scene.

3. MARKET VOLATILITY AND ECONOMIC UNCERTAINTY

Businesses have significant challenges due to market volatility and economic weakness, which calls for astute financial management in order to navigate through turbulent times. Market volatility refers to the degree of fluctuation in the exchange rates of financial instruments within a certain market over a given time frame. On the other hand, atypical macroeconomic factors such as international events, global economic conditions, and unforeseen emergencies give rise to economic vulnerability. These two factors can have a big impact on firms, affecting everything from daily financial duties to important planning.

The unpredictability of the market has a considerable impact on financial preparation. It can be challenging for organizations to accurately estimate incomes, establish spending plans, and present sensible financial objectives when resource costs fluctuate quickly and arbitrarily. Conventional estimating models may prove to be less reliable in this kind of setting, necessitating the adoption of flexible and dynamic financial planning techniques. Companies regularly use stress testing and situation analysis to examine the potential impact of changing economic conditions on their bottom line.

Techniques for mitigating wagers associated with market volatility include diversifying conjectures and employing financial instruments, such as options and futures contracts. Enhancement mitigates the impact of a poor performance in any one venture by distributing risk over a number of resources. Choices and prospect agreements can be used to protect the company against unfavourable market developments in the interim, providing some level of assurance.

The challenges posed by market instability are exacerbated by economic vulnerability. Companies need to combat the erratic behaviour of their clients, borrowing costs, and currency values. Consumer purchasing patterns may shift in vulnerable economic times, impacting demand for goods and services. Changes in loan fees may have an effect on acquisition expenses and, thus, capital speculating decisions. In addition, fluctuations in the value of money can affect international trade and the cost of importing goods and labor.

Businesses need to have coordinated financial management practices due to economic fragility. This involves paying close attention to key economic indicators, staying up to date on global developments, and maintaining flexibility in asset allocation and planning. Undertaking scenario planning and stress testing becomes essential for evaluating the adaptability of the company in various economic circumstances.

Ultimately, exhibiting volatility and economic susceptibility calls for a proactive and important approach to financial management. Companies that possess the ability to quickly adapt, make well-informed decisions based on risk assessments, and implement flexible financial processes are better equipped to handle the challenges posed by these particular economic circumstances and emerge stronger in the long run.

- **Impact on Financial Planning**

Market volatility has a major impact on financial planning, upending the conventional models and processes that companies use to chart their financial path. The inherent peculiarity of economic conditions makes it challenging to plan, accurately estimate incomes, and set realistic financial goals. Verifiable patterns and performance metrics may provide less reliable guidance in the face of elevated unpredictability, necessitating a more inventive and adaptable approach to financial planning. In order to assess the potential impact of shifting economic conditions on their financial well-being, businesses should integrate scenario analysis and stress testing into their planning cycles. Also, as market factors develop swiftly, the necessity for ongoing adjustments in line with financial goals becomes fundamental. Effective financial planning in the face of volatile markets involves being flexible, using technology to quickly analyze information, and being proactive in looking for opportunities to take advantage of gaps in the market.

- **Strategies for Mitigating Risks**

Businesses seeking financial flexibility must implement effective strategies to reduce the risks associated with market volatility. One important technique that sets enhancement apart is the categorization of speculations among different resource classes in order to distribute risk. Businesses can lessen the impact of a poor performance in one sector or market by avoiding relying too much on a single speculative investment. A different approach involves the application of financial tools, such as contracts for choices and destiny, which serve as tools for risk management. These tools provide some insurance against adverse market events, enabling firms to support themselves. Maintaining a robust framework for managing bets that includes constant monitoring of financial conditions, scenario planning, and stress testing is also essential. With the help of this proactive approach, organizations may identify possible threats almost instantly and implement the best modifications in line with their financial systems. Broadening, using financial instruments, and taking a conservative approach to risk management provide businesses with the tools they need to address the challenges posed by market volatility and enhance their overall financial strength.

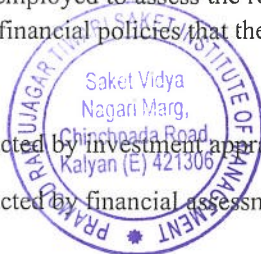
4. RESEARCH METHODOLOGY

This research calculates the relationship between hierarchical performance and management practices in the Indian business sector, including capital design selection, profit strategy, venture assessment techniques, working capital approach, and financial appraisal. Sixty organizations associated with the eight key economic sectors—banking, media transmission, concrete, protection, renting, material, manure, and oil and gas enterprises—were brought closer together. The companies in each field were selected on the basis of their use of financial management practices, profitability, and posting at the Delhi Stock Exchange. 39 organizations completed the questionnaires and sent them back; 35 full surveys were kept for further review; the remaining 4 surveys were left fragmented. 65% of respondents achieved a self-administered response rate on the survey. The organization's chief financial officer and other financial specialists were the responses. The surveys were self-initiated and distributed across sixty different groups. Each organization's concerned financial workforce was identified by phone, reference, and organization profile. All of the questions were explained to the respondents before the survey was administered, allowing them to complete it efficiently and with the appropriate responses. The example was limited to registered Indian companies operating in eight distinct areas. The survey was divided into two sections. The first section included general information about the organization and respondents, such as the name of the organization, the industry, the number of years the respondent has been in business, their contact information, the firm's income and deals, and its capital consumption. The second section included questions pertaining to five different areas (working capital, financial assessment, profit strategy, capital design decision, and processes for evaluating speculation). An apparent scale was used in area one. Likert scale placement (5-Place), with 1 being the most degree of arrangement and 5 denoting the lowest level of knowledge, was the scale used to evaluate application rehearsals. The factual bundle sociologies program (SPSS) was employed to assess the reliability of the data and conduct a relapse analysis. The survey was modified to account for the financial policies that the surrounding organizations adhered to.

4.1. Hypothesis of the Study

H1: Organizational performance is significantly impacted by investment appraisal approaches.

H2: Organizational performance is significantly impacted by financial assessment



H3: The choice of capital structure has a big influence on how well an organization performs.

H4: The performance of organizations is significantly impacted by dividend policies.

H5: Organizational performance is significantly impacted by working capital policies.

5. RESULTS

This study examines how financial management techniques are used in Indian corporate settings and highlights their importance. Relapse strategy analyzes the relationship between different financial management techniques and association performance. The findings are summarized below:

The aforementioned table demonstrates the consistency of every component of the survey. The reliability of the capital design decision (nine items) is 766, the profit strategy (fourteen things) is 855, the working capital arrangement (five things) has a Cronbach Alpha of 0.342, the financial performance evaluation using financial proportions (eight things) is 0.787 reliable, and the speculation examination procedures (twelve things) have the least reliable quality of 0.641.

Table 1: Measurement Instrument Reliability

Dimensions	No of Items	Cronbach Alpha
The Capital Structure Decision	11	0.766
Dividend Policy	13	0.855
Investment Appraisal Techniques	13	0.653
Working Capital Policy	3	0.744
Financial Performance Assessment	10	0.787

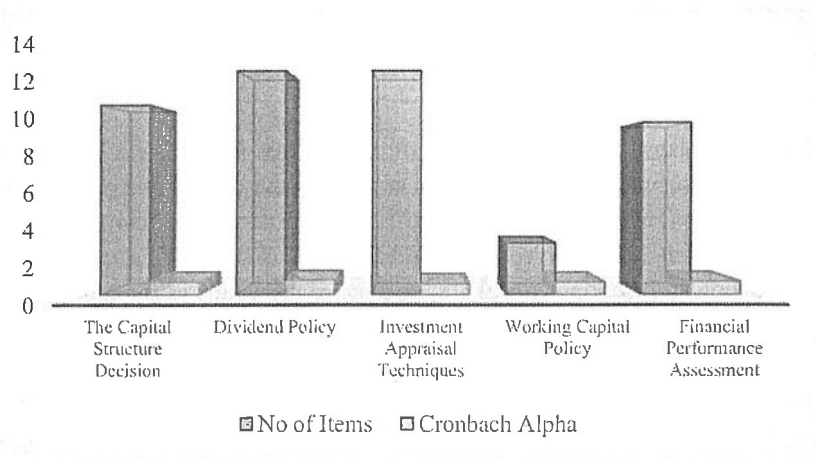


Figure 1: Graphical Representation of Measurement Instrument Reliability

Table 2 displays the annual incomes and deals of the respondents for the 2008–09 territories, ranging from under Rs 100 M to over Rs 1,000 M, as well as their annual capital expenditures, which ranged from under Rs 5 M to over Rs 100 M. Of the 35 organizations, 17 associations had income/deals above Rs 1,000 million in 2008–09, and their capital consumption exceeded Rs 100 million.

Table 2: Revenues, Sales, and Expenditure of the Company

Company revenue/ sales	no of companies	capital expenditure	no of companies
under Rs 100M	8	Under Rs 50M	7
Rs(100-500)M	5	Rs(50-100)M	8

Rs(500-1000)M	7	Rs(50-100)M	5
Over Rs 1000M	18	Over Rs 100M	18

The results of the relapse evaluation for authoritative performance are shown in Table 3. The results demonstrate the large size of the model ($p < 0.05$) and the strong positive correlation between financial management exercises and authoritative performance ($R\text{-Square} = 0.372$ and the $F\text{-value} = 13.852$). The model's free components account for 37% of the variation in the dependent variable. When the factors are examined individually, they are all significant ($p < 0.05$) and unquestionably related to authoritative performance. The most convincing components are the working capital strategy, capital design selection, and financial evaluation, each with relapse coefficients of 0.300, 0.234, and 0.350. The venture examination processes have a relapse coefficient of 0.169, indicating that their contribution to association performance should be approximately 18%. The relapse coefficient for profit strategy is 0.139, indicating that profit strategy is critical ($p < 0.10$) and can contribute as much as 14% to association performance. The model is often relatively large ($p < 0.05$), and each independent element influences authoritative performance, albeit to varying degrees of importance. While assessing financial performance remains the primary factor in determining an association's success, financial administrators are also placing a great deal of emphasis on capital construction and working capital strategies.

Table 3: Standard errors in parenthesis, t-values in brackets, p-values, and regression coefficients

Constant	investment Appraisal Technique	Financial Assessment	Capital Structure Decision	Dividend policy	working capital policy	R-Square	F-Statistics
2.389	0.169	0.350	0.234	0.139	0.300	0.372	13.852
(1.340)	(0.762)	(0.659)	(0.352)	(0.199)	(0.540)		
[1.722]	[3.445]	[4.617]	[2.194]	[1.814]	[3.142]		
0.099	0.017	0.016	0.020	0.062	0.003		0.030

According to the results of the relapse investigation, each of the five free factors has a basic impact on the performance of the association, and financial supervisors consider them crucial for the growth and performance of authorities. These results support all of the theories (Hello, H2, H3, E14, and H5) and demonstrate how financial management exercises, such as capital construction choice, are observed in the Indian business sector. financial plan. In women's assessment techniques. Financial evaluation and working capital are regarded as prerequisites for authoritative performance.

6. DISCUSSION

The effect of financial management drills on association performance is estimated in this study. The study concludes that capital construction decision, profit strategy, and venture examination processes are based on the aforementioned results. Association performance is fundamentally impacted by working capital and financial performance evaluation. However, financial leaders view working capital strategy, apex construction decision, and financial performance evaluation as more important than profit strategy and speculative analysis techniques. The findings show that the executives and experts understand and have agreed to the importance of financial management practices in the business domain. However, the study's conclusions are based on a sample of businesses that use financial management techniques; however, after reviewing the data, it becomes clear that a substantial portion of businesses in the Indian corporate sector do not adhere to these procedures, either completely or to a considerable extent. Therefore, efforts should be made to promote this culture throughout the region. Top management should be aware of the benefits of these procedures and their dedication to hierarchical performance.

7. CONCLUSION

Challenges with financial management pose significant barriers for companies who are keeping nothing back. Investigating financial weaknesses, adapting to changing administrative environments, or attending to liquidity needs—all of these challenges necessitate critical strength and proactive navigation. Robust financial management has a



significant impact on both the long-term viability of firms and daily operations. Companies should hire new representatives or provide high-value financial management training to current employees. In particular, the application of both quantitative and subjective venture assessment methods and optimal capital structure decisions. Financial leaders are advised to focus on speculative evaluation processes and profit strategy in addition to other practices, as effective profit strategy increases investor wealth and makes a financial backing company take notice, which ultimately affects the authoritative performance.

REFERENCES:

1. Addo, Isaac Kwame. 2017. "The Effect of Financial Management Practices on the Financial Performance of Top 100 Small and Medium Enterprises in Kenya." 2912155 (1): 6–32.
2. Based, America et al. 2016. "Effect of Internal Corporate Social Responsibility on Firm Financial Performance: Evidence from Kenya Commercial Bank." (11): 1–9.
3. Besley, S., & Brigham, E.F. (2015). *Poslovne finansije – CFIN*, Beograd, Data status.
4. Demba, Golda Akinyi. 2013. "Effects of Financial Management Practices on Performance of Kenya Medical Training College.": 60.
5. F. E. Brigham, J. F. Houston, *Fundamentals of Financial Management*, 8, 688 (Cengage Learning, 2014)
6. G. Reinaldo, O. Dione, *Revista Contabilidade & Finanças*, 24 (63), 181-194 (2013)
7. Jayashree, G., & Carmel Mercy Priya, I. (2016). A Study on the Financial Management Concepts for Organizational Success, *Imperial Journal of Interdisciplinary Research (IJIR)*, 2(12), 1201-1204. <http://www.onlinejournal.in>
8. K. Mukhtarova, S. Ziyad in, S. Kupeshova, & R. Doszhan, *Economic annals-XXI*, 168, 38-43 (2017). DOI: 10.21003/ea.V168-08
9. K. O. Amoako, E. O. Marfo, K. E. Gyau, & F. O. Asamoah, *Canadian Social Science*, 9 (5), 188-191 (2013)
10. Lawson, R. (2020). The impact of COVID-19 on the finance function, *Strategic Finance – SF Magazine*. <https://sfmagazine.com/post-entry/november-2020-the-impact-of-covid-19-onthe-finance-function/>
11. Mwangi, Joseph Kimani, Robert Otuya, and David K Kamau. 2014. "Effect of Financial Management Practices on Profitability of Matatu Transport Industry in Kenya." *Journal of Economics and Finance (IOSR-JEF)* 5 (5): 90–100.
12. Njagi, Irene Kageni, and Samuel Kariuki. 2017. "Equity Financing and Financial Performance of Small and Medium Enterprises in Embu Town, Kenya." 2(3): 74–91.
13. P. K. Ozili, *International journal of managerial finance*, 13 (4), 419-439 (2017)
14. S. Ziyadin, A. Omarova, R. Doszhan, G. Saparova, & G. Zharaskyzy, *Problems and perspectives in management*, 16(4), 331-343 (2018). DOI: 10.21511/ppm.16(4).2018.27
15. Yassin, Ali, Sheikh Ali, Abdiaziz Abdi Ali, and Abdiqani Ali Adan. 2013. "Working Conditions and Employees' Productivity in Manufacturing Companies in Sub-Saharan African Context: Case of Somalia." *Educational Research International* Educational Research International Educational Research International ISSN-L 2 (2): 2307–3713.



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Innovation And Entrepreneurship Challenges for Sustainable Business Growth for Indian Economy

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Abstract

In the context of the Indian economy, this abstract examines the crucial junction of innovation and entrepreneurship as major forces behind sustained economic success. India's economy is developing quickly, and this paper explores the potential and special problems that enterprises looking to grow sustainably confront. The study looks at the changing environment and explores the critical role that organisational and technological innovation plays in promoting entrepreneurship. It looks at the difficulties business owners have when negotiating the complexities of the Indian market, the legal system, and societal norms. The abstract also emphasizes how crucial a sustainable business model is to the long-term expansion and robustness of the Indian economy. Generally speaking, innovation is regarded as one of the main drivers of any nation's long-term, steady economic prosperity. The Indian economy is one of those with the quickest growth rates in this era of globalization. The Indian economy has grown by 7% on average over the last 20 years, but is this growth sustainable or just temporary? uniqueness that is embraced by an expanding data industry and a developing buyer market. It takes innovation to achieve long-term, useful growth. This essay attempts to understand the role that innovation plays in India's economic transformation. India, the world's second-most populous nation with a more moderate topography, needs to maintain the rate of growth of its gross domestic product otherwise it cannot be said that realistic improvement is the foundation of the country. This article aims to conduct a thorough analysis of the developments and potential future directions of startup frameworks in India in order to comprehend the reasons and driving forces behind the inorganic growth of startups in that country.

Keywords: Innovation, Entrepreneurship, Business Growth, Indian Economy

1. INTRODUCTION

The symbiotic relationship between innovation and entrepreneurship has emerged as a keystone for sustainable corporate growth in the context of the quickly changing Indian economy. India's economic trajectory, characterized by changes in consumer tastes, technology improvements, and demographic diversity, calls for a comprehensive knowledge of the opportunities and challenges associated with promoting innovation and entrepreneurship. This introduction provides an overview of the complex forces that influence firms' chances for long-term growth in the Indian context.



Indian entrepreneurship and innovation are closely related, especially considering the country's goals of inclusive growth and international competitiveness. Innovations in goods, services, or procedures not only propel economic development but also tackle urgent environmental and societal issues. Simultaneously, entrepreneurship functions as the means by which these breakthroughs are utilized and commercialized, significantly contributing to the generation of wealth, employment opportunities, and general economic vibrancy. Navigating India's innovation and business scene is not without its difficulties, though. The legislative complexity, infrastructural subtleties, and different consumer behaviors that characterize the Indian market present special challenges for enterprises striving for sustained expansion. The entrepreneurial environment is also shaped by cultural and societal norms, which have an impact on how risk is perceived and how businesses operate. Businesses looking to prosper and make a significant contribution to the economic fabric of the country must recognize and handle these difficulties. In light of this, this investigation aims to clarify the complexities surrounding innovation and entrepreneurship in the Indian environment and provide guidance for the development of sustainable business growth. Through an exploration of the intricacies and potentialities present in the Indian economic landscape, this research aims to offer perspectives that will not only add to the body of knowledge but also offer practical suggestions to companies and decision-makers who are eager to create an atmosphere that supports innovation-driven entrepreneurial success in India.

1.1 Backdrop of India's Economic Landscape

An essential framework for comprehending the necessity of innovation and entrepreneurship is India's economic environment. India is currently at a turning point in its economic history, characterized by rapid growth, a diverse population, and shifting market dynamics. The nation's economic vitality is demonstrated by important metrics including GDP growth rates and rising industries. India also offers a unique demographic dividend due to its huge and young population, which includes a sizable consumer base and a growing labor force. The dynamic nature of the market, driven by improvements in technology and shifting consumer preferences, highlights the need for innovative and adaptable company strategies. In light of this, the introduction highlights the need for creative solutions in order to maintain and accelerate this growth. It acts as a stark warning to companies and decision-makers to acknowledge the quickly shifting economic landscape and to leverage innovation and entrepreneurship to not only address present issues but also to steer India's economy towards long-term prosperity.

1.2 Role of Innovation and Entrepreneurship

Innovation and entrepreneurship have a critical part in determining how India's economic development will proceed. Innovation introduces new concepts, technologies, and ways to solve problems as they arise, acting as the catalyst for progress. Contrarily, entrepreneurship serves as the means by which these creative concepts are turned into successful companies, adding value and promoting economic advancement. When combined, these factors have diverse effects in a number of areas:

- **Economic Dynamism:** By encouraging the development of new goods, services, and industries, innovation and entrepreneurship energizes the economy. These dynamic increases competitiveness globally as well as promoting economic growth.
- **Job development and Wealth Generation:** Innovative ideas that drive entrepreneurial endeavors play a major role in the development of wealth and jobs. Small and startup companies, which are frequently at the forefront of innovation, are essential employers, especially for the growing youth population.
- **Resolving Social Issues:** Innovation and entrepreneurship play a critical role in resolving urgent social issues. These forces have the power to have a positive social impact on issues like environmental protection, expanding access to healthcare, and creating sustainable solutions.
- **Global Competitiveness:** Innovation and entrepreneurship make a country more competitive in today's globalized environment. Countries can position themselves as leaders in developing industries and make a contribution to the global marketplace by cultivating a culture of creativity and adaptation.

2. REVIEW OF LITERATURE

This joint venture takes the form of an extensive investigation of the intersection of innovation, sustainability, and business at the pivotal point where the Sustainable Development Goals (SDGs) meet. The writers deftly negotiate these domains' intersections, providing insight into how companies might match their tactics to the goal of sustainable development. The report offers a useful framework with perceptive analysis and useful recommendations for organizations looking to make a meaningful contribution to the SDGs. Azmat et al.'s (2023) presentation of a comprehensive perspective that cuts across disciplinary lines makes this book an important resource for both practitioners and academics.



In their investigation of the dynamic intersection of innovation, entrepreneurship, and economic progress, Bhalla and Prabakar (2023) pay particular attention to the Indian experience. The focus on the function of venture development in determining economic paths distinguishes this work from others. To highlight the influence of innovation and entrepreneurship on the economy, the writers carefully combine theoretical frameworks with empirical data. Contextualization within the Indian framework provides relevance and offers practitioners, researchers, and policymakers useful information about how to strategically intervene in entrepreneurship and innovation to promote economic growth.

By examining the causes, effects, and policy implications of entrepreneurship economics, Borah and Bhowal (2023) add to the body of scholarship. The study uses a combination of theoretical understanding and empirical data to take a nuanced look at the economic factors influencing entrepreneurship. The writers are successful in breaking down intricate economic ideas into easily understood parts, improving accessibility for a wide range of readers. For academics, decision-makers, and professionals looking to comprehend the complex aspects of entrepreneurship in the context of the wider economy, this work is an invaluable resource.

The authors (2023) present a thorough examination of the symbiotic link between technology, innovation, and the rise of entrepreneurship in this extensive review that spans a decade. They pay close attention to the financial consequences of their analysis. The work is noteworthy because it takes a long-term view and provides insights into how these processes have changed over time. The writers skillfully craft a story that illustrates the revolutionary potential of innovation and technology in igniting business ventures and supplying funding. For academics, decision-makers, and professionals interested in learning about the evolution and effects of technology on entrepreneurial environments, this study is an invaluable resource.

Haldar's (2021) research is noteworthy due to its emphasis on sustainable entrepreneurship within the renewable energy industry, with particular reference to Gujarat, India. The intricate interactions between entrepreneurship, renewable energy, and environmental practices are deftly navigated by the author. Haldar makes a substantial contribution to the literature by offering a sophisticated description of the difficulties and possibilities faced by business owners in this industry. The paper offers larger implications for sustainable entrepreneurship in the renewable energy arena, in addition to providing insight into the particular situation of Gujarat. This study is thought-provoking and enlightening for policymakers, scholars, and practitioners who are interested in the relationship between entrepreneurship and sustainability.

3. RESEARCH METHODOLOGY

3.1 Research Design

In order to examine changes in innovation and economic indicators in India over a 6-year period (2018–2023), this study uses a longitudinal design. Using a comparative methodology, the study looks at the 1990s as the setting for the emergence of the "New Economy," trying to understand how innovation affected economic growth both before and during this significant period.

3.2 Data Collection

❖ Primary Data Sources

The World Bank Information Bank will serve as the main source of data for this study. It offers extensive information on economic indicators such as GDP growth rate, GDP growth rate per capita, patent applications, spending on research and development, and spending on education.

❖ Secondary Data Sources

To enhance comprehension of the contextual elements impacting India's economic development, pertinent academic literature, official reports, and economic studies will be consulted in addition to the main data.

3.3 Variables and Measurements

India's economic development is the main subject of this study, which also employs GDP growth rate and GDP growth rate per capita as dependent variables. Three major independent variables are used to evaluate innovation: the quantity of patent applications, the GDP percentage allotted to research and development, and the percentage of GNI dedicated to education. Due to data restrictions, several variables, such as capital accumulation and infrastructure spending, are left out in order to keep the



focus intact. The goal is to present a thorough grasp of how innovation affects India's economic development during the designated time frame.

3.4 Sampling:

This six-year research project, which runs from 2018 to 2023, examines India's economic environment, paying particular attention to the pivotal year that is known as the "New Economy" era of 2018. In order to shed light on India's economic development during this crucial era, the research looks at data pertaining to innovation as well as national-level economic indices.

3.5 Data Analysis

The study investigates the association between innovation characteristics and economic indicators in India from 2018 to 2023 using regression analysis, trend analysis, and descriptive statistics. Furthermore, a comparative study between economic indicators prior to and during the designated period will be carried out in order to pinpoint noteworthy alterations linked to the emergence of the "New Economy". When combined, these analytical techniques offer a comprehensive knowledge of how innovation affects India's economic growth.

3.6 Ethical Considerations

Ethical issues are given first importance in this study, which protects sensitive economic data to ensure data privacy. Clear documentation of all data sources and procedures ensures transparency while supporting reproducibility and maintaining the integrity of the research.

The multi-collinearity test has been conducted to determine whether there is multi-collinearity among the components.

The model factor's relationship architecture is displayed in Table 1.

Table 1: Correlation Matrix

Items	GDP growth	R&D Exp	Education	FDI	Unemployment	GDP Per capita Growth	Patient Application
GDP growth	1						
R&D Exp	0.35211	1					
Education	0.29151	0.2361	1				
FDI	0.30251	0.3125	0.14251	1			
Unemployment	0.25141	0.4125	0.23614	0.13621	1		
GDP Per capita Growth	0.30125	0.1252	0.36211	0.23614	0.31425	1	
Patient Application	0.23115	0.3621	0.14211	0.36321	0.23621	0.31251	1



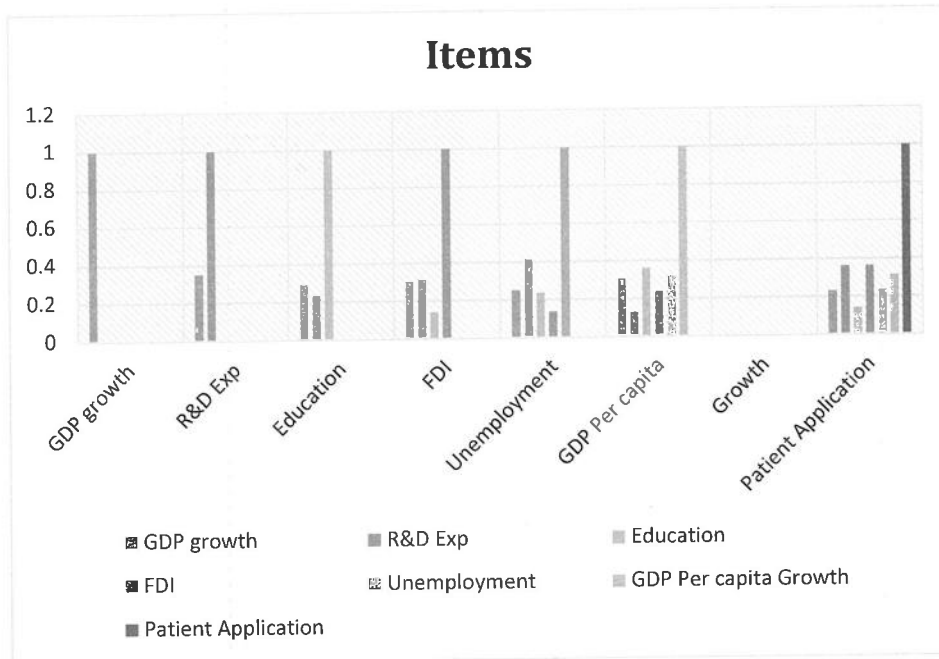


Figure 1: Correlation Matrix

In the context of the study, the correlation matrix above illustrates the correlations between innovation variables and important economic indicators. By examining the correlation coefficients, we find that GDP growth is positively connected with spending on R&D, education, and foreign direct investment (FDI). This finding raises the possibility of a positive feedback loop between investments in R&D, education, and FDI and overall economic growth. Interestingly, there is a positive association between R&D expenditures and education spending, highlighting the interdependence of knowledge and innovation investments. Furthermore, FDI has a somewhat positive link with GDP growth, suggesting that it may play a part in promoting general economic growth. On the other hand, unemployment does not show a high association with the other variables, indicating that factors other than those taken into account in this research may have an impact on it. Regarding innovation, there is a positive association between GDP growth, R&D expenditures, and the quantity of patent applications filed. This suggests that increased economic growth and spending in R&D and education may be linked to higher levels of innovation activity, as indicated by patent applications. Interestingly, the correlation matrix offers a quick glance at how these variables relate to one another. This can be used as a starting point for more in-depth multivariate analysis to find subtle dependencies and patterns in the information.

4. DATA ANALYSIS AND INTERPRETATION

The information and method area's model has been used to test the hypotheses in the review. Table 2 presents the findings of a multi-direct relapse model where the growth rate of the gross domestic product is the dependent variable and any other elements are free.

Table 2: Summary Output

Statistic	Value
Frequency	0.632514
Multiple R	0.611415
R Square	0.715261
Adjusted R square	0.796325
Standard Error	0.693251
Observation	0.712012



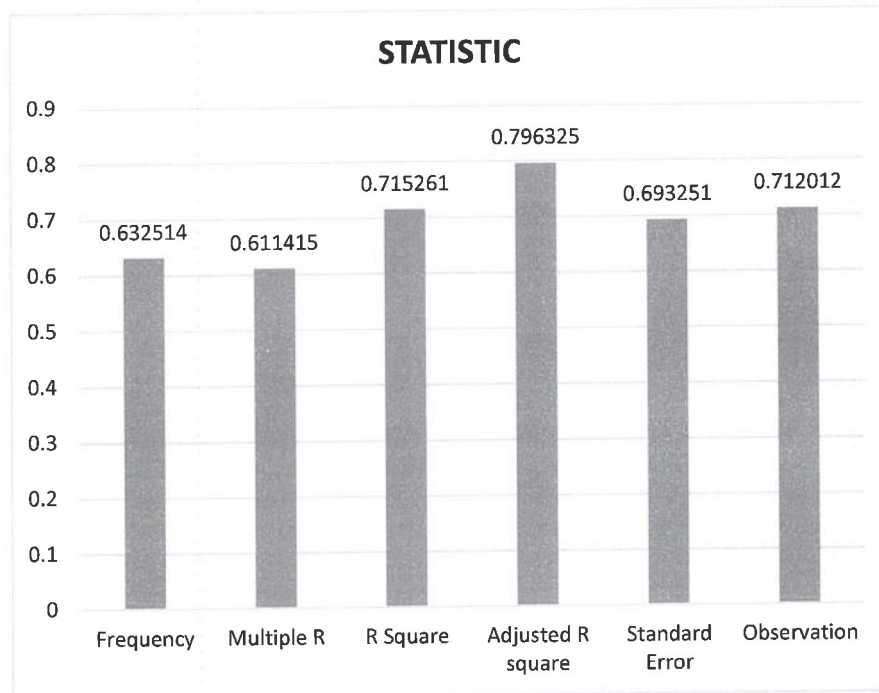


Figure 2: Graphical Representation of Summary Output

Important information about the relationship between the variables under examination is provided by the statistical output. The frequency, with a value of 0.632514, indicates that it occurs frequently or is prevalent in the dataset. Proceeding to the regression analysis, a moderately positive linear relationship between the variables is indicated by the multiple R value of 0.611415. With a R Square value of 0.715261, the independent variables in the model can account for around 71.5% of the variability in the dependent variable. The model's explanatory power is further supported by the significantly higher adjusted R square of 0.796325, a robust measure that takes the number of predictors into account. A better fit is shown by lower values of the standard error, which is represented by 0.693251, which indicates the accuracy of the model's predictions. Last but not least, the model's large data base (observation value of 0.712012) adds to the regression analysis's dependability. Together, these statistical measures show that the dependent variable has a well-fitting regression model that accounts for a sizable amount of its variability and has a notable level of precision and dependability.

Table 3: ANOVA

Items	df	SS	MS	F	Significance F
Regression	9	72.32261	15.36211	912.12515	7.6325141
Residual	7	0.351452	0.069552		

Important information regarding the overall significance and explanatory capacity of the regression model may be found in the analysis of variance (ANOVA) table. The regression model's sum of squares (SS), with 9 degrees of freedom, is 72.32261, which represents the overall variability the model can explain. 15.36211 is the computed mean square (MS) value, which shows the average variability per degree of freedom. With an astounding value of 912.12515, the F-statistic suggests that there is a significant difference between the model and a null model that has no predictors. The null hypothesis is rejected as a result of the high F-statistic and the extremely low significance level of 7.6325141, demonstrating the statistical significance of the regression model. Essentially, the dependent variable's variability is significantly explained by the regression model. Taking a look at the residuals, we can see that their mean square is 0.069552 and their total of squares is 0.351452. The residuals' lack of statistical significance suggests that the model's unexplained variability is small, which adds to the regression analysis's



overall strength. As a whole, the ANOVA table highlights the regression model's statistical significance, and the F-statistic suggests that there is a strong and meaningful association between the independent and dependent variables.

Table 4: coefficient

Items	Coefficient	Standard Error	T	P-value
Intercept	4.593121	0.3625141	10.32621	7.236251
R & D Exp	-3.263612	0.6758216	-8.32015	0.039223
FDI	-0.394211	0.4102510	-2.36251	0.163255
Patient Application	-0.714236	0.369214	2.301512	0.325151
Unemployment	-0.362514	0.302563	-4.36255	0.412362
GDP Per Capita Growth	0.7102361	0.413602	7.236142	0.625132

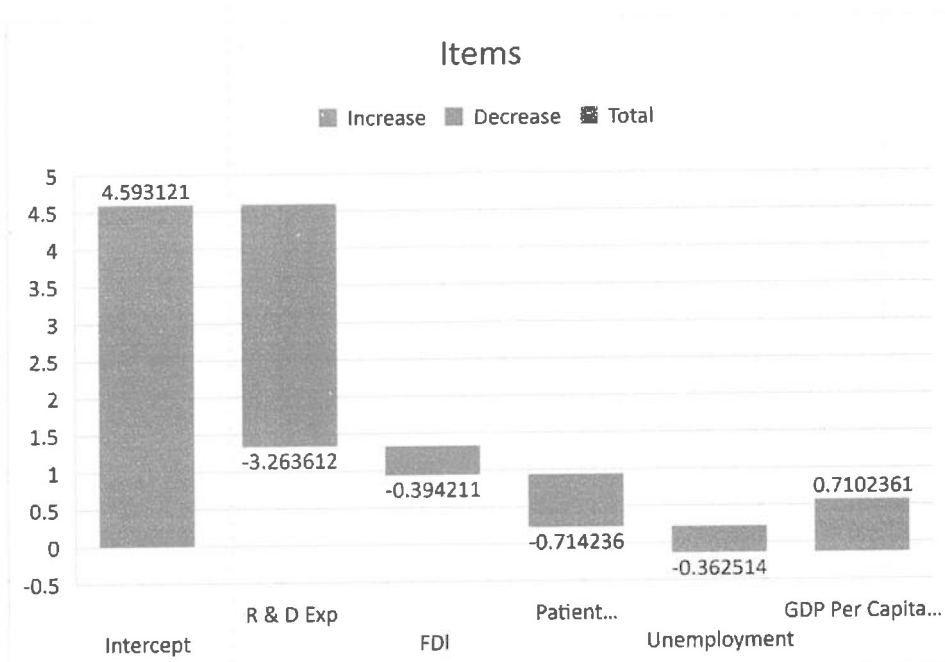


Figure 3: coefficient

Important information about the connections between independent factors and the dependent variable is provided by the regression analysis. The significance of the intercept in the model is demonstrated by its statistical significance, which represents the predicted value when all predictors are zero. Research and development expenditures have a substantial negative effect on the dependent variable, suggesting that higher R&D spending is associated with lower outcomes. Although FDI and the quantity of patent applications exhibit declining tendencies, it is unclear how significant these trends are statistically. With a negative coefficient, unemployment has a significant impact on the dependent variable, indicating that a higher rate of unemployment is linked to a lower outcome. The dependent variable is positively impacted by GDP per capita increase, and



this relationship is statistically significant. All things considered, these results offer a sophisticated comprehension of the distinct inputs made by every variable and their importance in shaping the result.

5. CONCLUSION

Financial resources allocated for creative labor and education can contribute to India's gradual, controlled economic growth. To attain economic success, a nation must be innovative. Through innovation cultivation, India might become a leader rather than a follower nation. More funding for training and research and development is needed to accomplish this goal, as it would eventually increase India's productivity. Yet, the outcome of this research paper model is unexpected. This indicates that, unlike most industrialized countries, innovation has not been a driving force behind India's progress. In summary, sustainable business growth in the Indian economy depends critically on addressing the opportunities and problems that arise at the nexus of innovation and entrepreneurship. These difficulties must be addressed if India is to maintain long-term economic resilience as it navigates the intricacies of a fast-changing global landscape. These issues highlight the complexity of the innovation and entrepreneurship scene, with issues ranging from restricted access to resources and finance to complicated regulations. Acknowledging these difficulties as triggers for tactical actions and legislative changes is essential, nevertheless. The key to getting over these obstacles is to promote an innovative culture, simplify regulations, and build partnerships between the public and private sectors. To ensure a more resilient and inclusive economy, India can leverage the promise of emerging technology, encourage sustainable practices, and foster a thriving startup ecosystem.

REFERENCES

1. Azmat, F., Lim, W. M., Moyeen, A., Voola, R., & Gupta, G. (2023). Convergence of business, innovation, and sustainability at the tipping point of the sustainable development goals. *Journal of Business Research*, 167, 114170.
2. Bhalla, R., & Prabakar, S. (2023). Entrepreneurship, Innovation, And Venture Development Impact on Economic Growth in Indian Experience. *Journal of Informatics Education and Research*, 3(2).
3. Atul Kathole, Dinesh Chaudhari "Securing the Adhoc Network Data Using Hybrid Malicious Node Detection Approach", Proceedings of the International Conference on Intelligent Vision and Computing (ICIVC 2021) pp 447–457 © 2022 The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.
4. Borah, A. J., & Bhowal, A. (2023). The Economics of Entrepreneurship: Drivers, Impacts, and Policy Implications. *South Asian Journal of Social Studies and Economics*, 20(2), 89-99.
5. Daraojimba, C., Abioye, K. M., Bakare, A. D., Mhlongo, N. Z., Onunka, O., & Daraojimba, D. O. (2023). Technology and innovation to growth of entrepreneurship and financial boost: a decade in review (2013-2023). *International Journal of Management & Entrepreneurship Research*, 5(10), 769-792.
6. Haldar, S. (2021). Sustainable entrepreneurship development in the renewable energy sector: Insights from Gujarat, India. *African Journal of Science, Technology, Innovation and Development*, 13(7), 873-885.
7. Atul Kathole, Dinesh Chaudhari "Secure Hybrid Approach for Sharing Data Securely in VANET", Proceeding of International Conference on Computational Science and Applications pp 217–221, © 2022 The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.
8. Kadaba, D. M. K., Aithal, P. S., & KRS, S. (2023). Government Initiatives and Digital Innovation for Atma Nirbhar MSMEs/SMEs: To Achieve Sustainable and Inclusive Economic Growth. *International Journal of Management, Technology, and Social Sciences (IJMTS)*, 8(1), 68-82.
9. Khadria, B., & Mishra, R. (2023). Technological Transformation and the Role of Frugal Innovations in Entrepreneurship Development in India. *The Journal of Entrepreneurship*, 32(2_suppl), S27-S46.
10. K. Netaji Vhatkar and G. P. Bhole, "Self-improved moth flame for optimal container resource allocation in cloud," *Concurrency and Computation: Practice and Experience*, vol. 34, no. 23, Oct. 2022, doi: 10.1002/cpe.7200.
11. Malhotra, S., & Kiran, R. (2023). Examining the Relationship between Entrepreneurial Perceived Behaviour, Intentions, and Competencies as Catalysts for Sustainable Growth: An Indian Perspective. *Sustainability*, 15(8), 6617.
12. Régnier, P. (2023). Innovation, Appropriate Technologies and Entrepreneurship for Global Sustainability Development: A Review Until the Early Twenty-first Century. *The Journal of Entrepreneurship*, 32(2_suppl), S12-S26.
13. K. N. Vhatkar and G. P. Bhole, "A comprehensive survey on container resource allocation approaches in cloud computing: State-of-the-art and research challenges," *Web Intelligence*, vol. 19, no. 4, pp. 295–316, 2021, doi: 10.3233/WEB-210474.
14. Rena, R. (2023). An overview on the role of innovation in making sustainable and future-ready businesses. *Indian Journal of Commerce and Management Studies*, 14(1), 11-18.



15. Sonali D Patil, Atul B.Kathole, Savita Kumbhare, Kapil Vhatkar, Vinod V. Kimbahune, "A Blockchain-Based Approach to Ensuring the Security of Electronic Data", International Journal of INTELLIGENT SYSTEMS AND APPLICATIONS IN ENGINEERING, IJISAE, 2024, 12(11s), 649–655. <https://ijisae.org/index.php/IJISAE/article/view/4486/3145>
16. Sagar, G., Anand, B., Perumalla Varalaxmi, A. S., & Raj, S. (2023). The Role of Entrepreneurship in Economic Growth and Development. Journal of Survey in Fisheries Sciences, 10(1S), 5940-5955.
17. Sharma, G. (2019). Innovation and entrepreneurship research in India from 2000 to 2018: a bibliometric survey. Journal of Management Development, 38(4), 250-272.
18. A. B. Kathole, K. N. Vhatkar, and S. D. Patil, "IoT-Enabled Pest Identification and Classification with New Meta-Heuristic-Based Deep Learning Framework," Cybernetics and Systems, vol. 0, no. 0, 2022, doi: 10.1080/01969722.2022.2122001.
19. Srikanth, M., Kumar, G. N., & Reddy, W. R. (2020). Entrepreneurship, innovation, and economic development: An Indian experience. SEDME (Small Enterprises Development, Management & Extension Journal), 47(3), 279-292.
20. Vig, S. (2023). Sustainable development through sustainable entrepreneurship and innovation: a single-case approach. Social Responsibility Journal, 19(7), 1196-1217.



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Role of ICT Technology in Modern Education for Growth of Indian Economy

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Abstract

Because of advancements in information and communication technology (ICT), higher education in India has accelerated. The ICT is the primary driver behind the efficient delivery of value education in higher education. ICT advancements have been taken into account in higher education frameworks around the world for the past twenty years. In this cutting-edge worldwide culture, the demand for smart and skilled workforce is growing steadily. Information and communication technology (ICT) is currently changing how higher education is organized in all nations. The study anticipates that India would pick the viability of ICT in sustaining the system of high level training structure in this nation. Accessibility, use, information, and cost are the four aspects that have been adequately identified from various supplementary sources. The exploration is seeking to analyze the impact of ICT by looking into these four elements. The models from various colleges and schools have been collected using the accommodation testing technique. to put the theory to the test and determine the result Different relapse analysis and exploratory variable analysis have been used. The study's findings demonstrate that one of the factors most influencing ICT feasibility is cost.

Keywords: Information and Communication Technology, Higher Education, India, Issues, Challenges

1. INTRODUCTION

With the use of information and communication technologies (ICT), we now live in a different world, sometimes referred to as a small town. Access to knowledge quickly and easily has given us the chance to develop. It offers advice in essentially every sector, including education. But education, which is itself referred to as a cycle of communication, has yet to catch up with the highest possible and ideal level of information and communication advancements. In particular, higher education, where the importance of representation and top-to-bottom idea creation cannot be overstated. In essence, this exploration essay looks at the problems, difficulties, and solutions for the high level advancement of ICT for educational repercussions at a higher level.

ICT refers to a broad phrase that unifies all electronic devices and inventions as a way to quickly gather, process, trade, and transfer information to others. It is feasible to study the integration of ICT, especially the web, into the educational framework as a potential catalyst for this sector's transition to 21st-century transformations. A cycle of legal, reasonable, and efficient sanctioning and organization of ICT in education can be expected to lift students' motivation to acquire knowledge and skills as lifelong learning and to enable both teachers and students to adopt a more effective approach to teaching and learning. ICT progress has generally altered corporate, administrative, and educational practices, as well as all other spheres of human endeavor. In agrarian countries like India, where education is still seen as a crucial foundation for social, financial, and political mobility, desire for education has reached its peak. For those who want to pursue an education, India is continually faced with a variety of obstacles, including legal, financial, semantic, and practical ones. In any event, it is believed that ICT can alter the nation's educational landscape.

The revolutionary potential of ICT in higher education in India has helped to increase the need for higher education in the nation through part-time and distance-learning programs. It frequently serves as a tool to overcome obstacles posed by time and distance in addition to financial constraints, a lack of instructors, and poor educational quality. According to Mooij (2007), distinct ICT-based education can be expected to provide more significant unwavering quality, legitimacy, and competency of information assortment as well as more significant ease of examination, assessment, and translation at any educational degree. ICT has an increasing role in education even if the world is moving quickly toward modern media. The way that knowledge is disseminated today has evolved, as has the way that teachers interact and communicate with their students. Additionally, it can foster student unity and provide organizational structures that rise above limitations.



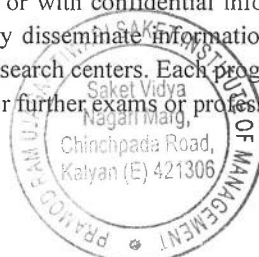
Figure 1: Education Quality

THE IMPORTANCE OF USING ICT IN TEACHING-LEARNING PROCESS

It is commonly acknowledged that ICT plays a crucial role in enhancing working conditions, information processing and interchange, educational techniques, scientific research, and information access. Lecturer can use her ICT to facilitate peer discussion, critical thinking, and learning. Technology-based instruction may not be required in every class, but overall, it provides relevant models and demonstrations, reorients classrooms, schedules students for the workforce, and improves education. Most beneficial because it increases flexibility, improves access, and meets public demand. for efficiency. Research shows that the primary purpose of using technology in the classroom is to provide value to students. This increased value should affect student performance. In their opinion, ICT has great application potential in course delivery.

A few scholars believe that technology has the ability to change how pupils advance and how teachers teach. According to certain authors, technology might "revolutionize" education. In other words, ICT assist instructors and students with developing their abilities, and when appropriately applied, they might alter the jobs and social conventions in the classroom.

The Certificate, Graduation, Post-Graduation, Doctoral, Post-Doctoral, and Cooperation educational projects are included in the Higher Education Framework in India and are offered to candidates to select under schools, organizations, colleges, and examination focuses in order to enhance their insight for practical ramifications. In India, a huge number of educational foundations owned by the government or with confidential information have been established. The main objective of educational institutions is to effectively disseminate information through the proper use of its resources, which include lecturers, classrooms, libraries, and research centers. Each program has clear outcomes, but the most well-known outcome is that it prepares the participants for further exams or professional skills.



2. LITERATURE REVIEW

Pegu (2023) examined the role of ICT in higher education in India in his review, "Information and Communication Technology in Higher Education in India: Challenges and Amazing open doors." The evaluation found regrettable entry of ICT programs in higher education, and due to lingual diversity, it is necessary to create content in local/provincial dialects. Additionally, there are a lot of opportunities because these initiatives may successfully achieve the desired learning outcomes.

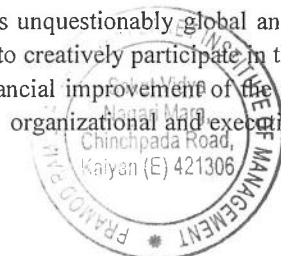
Chandha (2015) presented her viewpoint on mechanical learning gadgets for learning in her review titled "ICT and Present Homeroom Situation". In order to provide a favorable methodology towards the effective execution of ICTs, she illustrated several ways of integrating ICTs to the level of homeroom instruction and proposed workable plans to do so. Deol (2015) looked into the "Viability of CAI Projects on the Accomplishment in Educating of Social Examinations" in order to determine the effectiveness of PC Assisted Guidance (CAI) programs in regards to the success in the teaching of social investigations. He used 50 students from the ninth grade at Sant Sundar Singh Public Higher in the Punjabi area of Ludhiana as an example. As a final demonstration, he administered the Raven-created Standard Moderate Frameworks Test to the understudies whose results were below average. He then conducted his investigation after randomly selecting 14 students from each of the control and exploratory groups. He discovered that the exploratory group's accomplishments were higher as compared to the benchmark group after the CAI program was administered to the trial lot. This shows that ICT programs may have aided in improving subject comprehension. Kaur (2015) found that the transition to study halls with technology implants necessitates a change in educator preparation in her review titled "ICT Culture in Educator Education". She suggested various types of contributions to educator preparation, such as information on fundamental hard drive skills, understanding framework programming, using media, an introduction to open source programming, and social, legal, moral, and medical problems, among other things, that are worth executing in educator preparation programs. Her goal was to make understudy instructors aware of ICTs and ensure their similarity to creative advancements.

In her assessment titled "Mix of ICT in Educator Education" published in 2015, Sandhu focused specifically on the problems and worries related to integrating ICT into programs for educator education. Making educators comfortable with creative innovations is one of the key concerns to take into account, she said, as their comfort level would help with integrating ICTs into the homeroom teaching. It is necessary to alter educator education in order to prepare teachers for changing circumstances.

In their review titled "ICT in Instructing Growing experience for Higher Education: Challenges and Amazing open doors" [9], Girish and Sureshkumar (2017) focused on the difficulties and opportunities associated with implementing ICT in the homeroom for teaching and growing experience. Additionally, they concentrated on the factors that needed to be altered completely in order to fully realize ICT programs' potential for improved teaching and learning. They identified a number of issues, including high costs, a lack of the core support needed for the intricate operation of ICT-enabled learning tools, and the unfulfillment of basic requirements like electric inventory, among others. In the end, ICT implementation has open doors since the learning outcomes made possible with their help have significantly improved.

3. ICT IN HIGHER EDUCATION

Throughout the 1990s, a variety of factors combined to force institutions of higher learning to look into the expanding opportunities that information and communication technology (ICT) presented in terms of both improving teaching methods and concurrently changing how chairs and academics drew in with many student partners. As we enter the twenty-first century, a variety of factors are significant areas of strength for implementing ICTs in education, and current trends suggest we will soon witness significant shifts in how education is organized and delivered using ICT. Furthermore, given how quickly new developments develop and alter, higher education frameworks ought to keep pace with improvements in knowledge and skills. Colleges must ensure that their students have the necessary knowledge, skills, and capacities to compete successfully in today's unquestionably global and competitive market."The ICT strategy in higher education targets preparing young people to creatively participate in the foundation, feeding, and development of an information society prompting all-around financial improvement of the nation and global intensity ICT is used for organizational and executive objectives in addition to for the delivery



of presentations and materials. Clearly, the use of ICT has benefited regulatory capacities such as understudy enrollment, grades, course schedules, and in any case, staffing assessment. Higher education must incorporate ICT, and the emphasis will be on using it to strengthen the foundation for open and distance learning. The specific role of ICT in improving research skills should be acknowledged in institution- and region-wide higher education ICT strategy and planning, which should also contain a suitable foundation backed by limit building. Through institutional collaboration, computerized libraries, access to online data sets, organization, and other services can be improved to ensure the best use of ICT skills and resources.

3.1 Process of Communication in ICT

The process of communication is a two-way process. It happens between two persons one to one or one to many in a group communication. Communication between the sender and the receiver through some media/ channels of communication. Here the sender or the source, sends an idea as a message to the receiver, through some channel or medium. The following diagrammatic presentation makes it clear about the process/ model of communication.

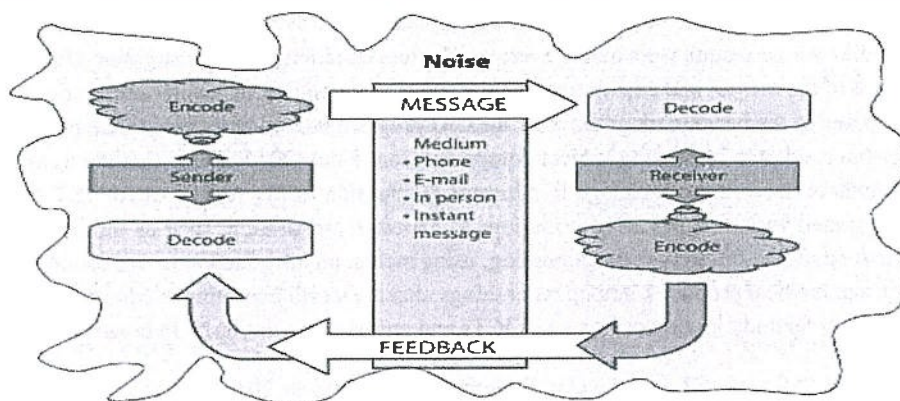


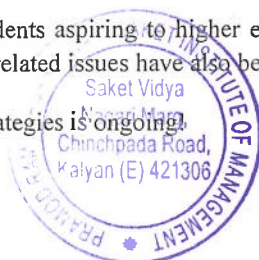
Fig 2 : ICT Process Communication

ICT can play important roles in higher education, for instance.

- Increasing the local college community's access to cycles for developing existing arrangements, regulations, and techniques.
- Relationship between college executives and organizations that use facades and interior spaces
- Increasing responsibility and openness in the collection, use, and administration of money and money-related resources.
- Watching how various duties, including teaching and research, are carried out
- Improving various College procedures

4. CHALLENGES AND ISSUES FOR ICT IN HIGHER EDUCATION

- Problems with India's Education Framework Concerns over access and admission to education continue to capture the attention of all segments of society.
- As a result of sustained efforts over many years, the country can now boast maybe one of the largest High ring structures ever.
- As throughput has increased and the number of students aspiring to higher education has been continuously rising, concerns about the value of education and other value-related issues have also begun to surface.
- The experiment to develop alternative educational strategies is ongoing.



• Frameworks for effective administration of the Higher framework are being catered to in the areas of education, educator capacity building, and information.

• As information and communication technologies grow, they become more accessible, dependable, and developed, making it possible to use ICT for education more and more realistic.

5. Objectives of Educational Technology

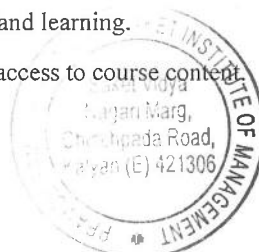
The main objectives of Educational Technology are:

- To modernise the learning methods and techniques after systematizing them so that these may be turned effective according to the needs of the changing era for the unknown future.
- To bring about desirable modifications in the behaviours of the teacher's and pupils by improving the teaching, learning and evaluation conditions.
- To make the classrooms teaching easy, clear, interesting, effective, understandable, objective and scientific.
- To help in increasing various facilities by solving the most complicated problems of human life so that the human life may carry on its progress continuously.
- To identify the educational needs and aspirations of the community.
- To determine the aims, objectives and in general the structure of education.
- To develop an integrated curriculum of arts, science and human values.
- To identify and locate material resources and strategies for achieving the desired aims of education.
- To develop specific models of teaching to bring about an improvement in the teaching-learning process.

6. Concept and Importance of ICT

ICTs stand for Information and Communication Technologies and are defined, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony. Information and Communication Technologies consist of the hardware, software, networks, and media for collection, storage, processing, transmission and presentation of information (voice, data, text, images), as well as related services. ICTs can be divided into two components, Information and Communication Infrastructure (ICI) which refers to physical telecommunications systems and networks (cellular, broadcast, cable, satellite, postal) and the services that utilize those (Internet, voice, mail, radio, and television), and Information Technology (IT) that refers to the hardware and software of information collection, storage, processing, and presentation. For the purposes of this policy, Information and Communication Technologies are defined as all digital devices, tools, content and resources, which can be deployed for realising the goals of teaching-learning as well as management of the educational system. According to National Research Council, Learner-centered environment is where “the careful attention is paid to knowledge, skills, attitudes and beliefs of the learners in the classroom”. ICT finds its use in education for the following reasons:

- ICT assists students in accessing digital information
- ICT promotes collaborative learning in a distance-learning environment
- ICT offers opportunities to develop critical thinking skills.
- ICT produces a creative learning environment.
- ICT improves the quality of teaching and learning.
- ICT supports teaching by facilitating access to course content.



Scope of ICT

ICT has a vast scope in the field of education. At all levels of education, whether at school or college, ICT has promising results. These encompass the areas such as teaching- learning in and outside the classroom, in regular face-to-face set-up or distance mode. Thus, the scope of ICT in education can be discussed in detail under the following sections.

Use of ICT in teaching-learning process: The common use of ICT for teaching includes preparation for notes, teaching learning resources and examinations. This does not enable teachers to radically change their pedagogical practices. Teachers need to go beyond such simple use by involving students to use ICT so as to transfer students' learning. The bestway of using ICT by teachers in teaching-learning process is to see that students are motivated to use technology which takes care of concentration on technology or on the teacher at a given time in the classroom.

Use of ICT for Publication purposes: The educational uses of ICT for publication purpose is mainly to disseminate information or ideas and share them with the school community, public, governmental organizations within the country or abroad. These products of publication take the shape of a newsletter, brochure or a website. Students can publish a newsletter by procuring the information related to an organization-Governmental or Non- Governmental. While taking up publishing work, student play roles such as editors, reporters, authors and designers of the newsletter. Later they also plan, design, create and distribute them in and outside the school for the people concern.

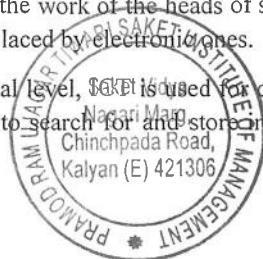
Use of ICT in Evaluation: Evaluation is a significant part of teaching which comprises the learning process and also the provision feedback to learners. Teachers in traditional face-to-face situations use interaction as an opportunity to provide feedback to learners, besides communicating their strength and weaknesses. With the advent of technological developments, there is limited opportunity for face-to-face Interaction. Now, teacher uses a combination of two forms of evaluation: Formative Evaluation: This is used as a learning tool, and to give and gain feedback on learner ability and performance. Summative Evaluation: This is an evaluative method for grading and making a judgement about the participant's achievement in a course. Formative evaluation can take the form of any one or many of the following types of assignments:

- **Portfolios:** Portfolios are the collection of a student's work over a period of time. They take the form of action plan without comes which is at various stages of implementation; a series of paintings with student self-reflection; or a collection of essays accompanied by an annotated bibliography and critique.
- **Reports, essays and journals:** These belong to specific kind on interest. These are aimed at developing critical thinking skills and to make judgements about various actions, plans, ideology, movements in history or a discipline specific collection of readings.
- **Case studies and scenarios:** These are used to develop analytical skills based on a specific area or knowledge.
- **Online (asynchronous) conference discussions and synchronous oral examinations:** These evaluation techniques favour learners who are skilled in presenting thoughts and ideas through inter-personal interaction.

Use of ICT for Research purpose: Products and processes of ICT provide access to a lot of information on innumerable topics produced by people of diverse areas and fields across the globe. This information is either singled out in combination of the form of text, images, sounds, videos and animation. For research, sifting through a number of websites in search of relevant, authentic and high quality information is a challenging experience. So, while looking for resources one of the easiest and safest methods of researching is to use directories. These aspects lead to collaboration of research work in which the different areas or processes of the research project can be shared to produce quality results and achieve the desired goals.

Use of ICT for Administration: ICT for administration purposes include the preparation of school announcements, reports, letters and student registration. ICT makes the work of the heads of school easy and manageable and document storage saves a lot of space, as physical files are replaced by electronic ones.

Use of ICT for Personal Purposes: At the personal level, ICT is used for communication, personal development and entertainment purpose. Again, most usage will be to search for and store information, and submit online application-



subscription, purchase or other personal uses.

Use of ICT for Professional development: ICT uses for professional development is indicated in searching for information for self-study and communication. This enhances teacher's confidence in their areas of specialization. To further their teaching career, few teachers use ICT and consequently motivate others to use ICT.

Characteristics of ICT

The characteristics of ICT in education can be discussed in detail under the following headings:

Student-centric: In these classrooms, students play an active role in their learning and teachers serve as mere guides. They are more facilitators of learning than lecturers. They help students think critically and learn by doing and act as a resource while their students discover and master new concepts. Student-centric classroom environments put students' interests first and are focused on each student's needs, abilities and learning styles.

Computing devices: Computers are readily available in modern classrooms, since they are essential tools for 21st century students and replace the utilities of pen and paper. They not only give students the means to conduct online research and master the technology skills they need, but they also give teachers the opportunity to enhance their lessons. The ability to deftly operate a computer is a critical 21st century skill. Computing devices greatly assist in teaching and learning and make them more engaging and effective.

Active learning: In modern classrooms, students are actively engaged in what they learn. Students participate in more active learning by working in groups or on computers and complete projects and other interesting activities that help them discover new skills. Students can learn actively by talking and listening, writing, reading and reflecting. When students are encouraged to take an active interest in learning, they are more likely to retain the knowledge they've accumulated.

Adaptive learning: Any classroom will always have students of different types of learning abilities in it which often makes it difficult for teachers to make sure that all of them understand the concepts. The modern approach of adaptive learning gives students the freedom to learn at their own pace and in the way they are most comfortable with. There are various kinds of software available for adaptive learning that teachers can use to enhance the learning of their students.

Invitational environment: The classrooms should not be cramped or overcrowded. Modern classrooms should have the basic material required for teaching such as, interactive whiteboards and LCD projectors. The BYOD (Bring-Your-Own-Device) approach can be adopted, so that students can bring their laptops or tablets to the classroom for better personalized learning. Teaching with technological material is more effective, stimulates student engagement, eases the work of teachers and makes it easy for students to focus on learning.

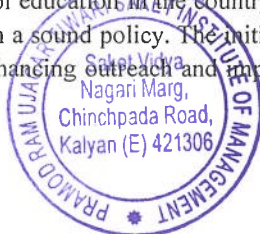
AIMS AND OBJECTIVES OF NATIONAL POLICY ON ICT IN SCHOOL EDUCATION IN INDIA

The National Policy on Education 1986, as modified in 1992, stressed the need to employ educational technology to improve the quality of education.

The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology@ Schools in 2004. Educational technology also found a significant place in another scheme on upgradation of science education.

The significant role ICT can playing school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005. Use of ICT for quality improvement also figures in Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). Again, ICT has figured comprehensively in the norm of schooling recommended by the Central Advisory Board of Education (CABE), in its report on Universal Secondary Education, in 2005.

With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education is inspired by the tremendous potential of ICT for enhancing outreach and improving quality of education. This policy



endeavours to provide guidelines to assist the States in optimizing the use of ICT in school education within a national policy framework

7. RESEARCH METHODOLOGY

A framework for gathering and sorting information is provided by an assessment design. The authors used elucidating exploration for this investigation, and a cross-sectional examination arrangement was used. Through a pre-attempted review, the essential data for the assessment has been gathered. The information that will be gathered from doctorate proposals, periodicals, publications, reliable sources, and so forth is discretionary information. Scientists gathered the data for this investigation from several West Bengali schools and colleges. The locations from which the information was taken are the well-known West Bengali cities of Burdwan, Malda, Siliguri, Kolkata, and Medinipur. The areas were picked based on how close various schools and institutions were to them other. The comfort-testing process has been used to determine the responses from various students in schools and universities, as well as from teaching personnel and non-teaching employees. Specialists distributed 450 questionnaires to various respondents, and 386 properly completed surveys were returned to the specialists. Information was gathered from various respondents using a simple, straightforward survey made up of closed-ended questions.

7.1. Hypotheses of the Study

- The accessibility of ICT is significantly influencing its efficacy in the education sector.
- The use of ICT is significantly affecting how well it works in the field of education.
- The effectiveness of ICT in the education sector is significantly impacted by knowledge from ICT.
- The cost of ICT is significantly affecting how well it works in the field of education.

8. ANALYSIS AND RESULT

8.1. Validity & Reliability Analysis

The two types of legitimacy that make up the build legitimacy are linked legitimacy and separate legitimacy. Here, there is a strong co-association coefficient between the different part variables, and a larger percentage of the co-association coefficients are at higher levels. As a result, it demonstrates that the joint legitimacy is present here. Despite the strong co-association coefficients between the parts of a given component, the relationship between one variable and the variable of a different component is just as tenuous. Here, it similarly demonstrates the legitimacy of segregation.

Table 1: Data on overall reliability

Cronbach 's Alpha	Number of Items
.982	24

For the most part and individually, a Cronbach alpha more than 0.70 indicates that the consistency scaling is excellent in many circumstances, and from the analysis it is shown that the Cronbach's Alpha result is 0.982. When the respect is greater than 0.70 in a demonstration of hatred, the expert can assume that the Cronbach's Alpha result is sufficient and, if necessary, the examiner can move forward with the additional assessment. Both face validity and content legitimacy have been carried out with the help of the master's ideas.

This evaluation made use of the exploratory component investigation (EFA) feature of SPSS 21. The authenticity test and the model's wellness have been examined by the assessment and model.



Table 2: Test of KMO and Bartlett

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.736
Bartlett's Test of Sphericity	Bartlett's Test of Sphericity	Approx. Chi-Square	3823.548
		Df	324
		Sig.	.000

Here, the four important points excluded from the element assessment, which consists of 23 significant aspects, are availability of ICT, utilization of ICT, information from ICT, and cost of ICT. The most important aspect in the "Accessibility of ICT"-related factor is "Accessibility of overall around furnished Information Technology lab in school/Higher". People in West Bengal who are involved in higher education are also impacted by the availability of fast internet for individual devices and IT labs via Wi-Fi, online mixed media/video conferencing during lectures in the study hall (Shrewd Homeroom), the availability of an advanced library in IT Labs, and the availability of an IT Lab for round-the-clock access inside the campus or outside through PDA applications. The most influential factor in the "Utilization of ICT"-related factor is "Use of latest advancement of ICT in school/college," followed by "Use of sight and sound device instead of Chalk and Board," "Use of web for tackling tasks and exercises notwithstanding digital books/e-diaries," "Use of Wi-Fi in college/universities to get to information through PDAs, tablets, and so on," and "Use of web for Use of ICT for different participation recording frameworks, use of videoconferencing for live class addresses for students who can't attend, use of videoconferencing for monitoring student and instructor activity during class, etc. The most important variable in the "Information from ICT" related factor is "ICT in higher education framework gives information to work various gadgets," and the most important variable in the "Cost of ICT" related factor is "IT Lab services to the understudies bears ostensible charges as a part of educational expenses."

Relapse examination is currently being used to identify which of these factors has the biggest impact on how well ICT is used in higher education.

The four components that stand out from the component examination are cost, availability of ICT, use of ICT, and information from ICT. In this case, the viability of ICT in higher education was used as a reliant variable, while the additional four components were used as free variables.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.640	0.451	0.456	0.7836462	2.671

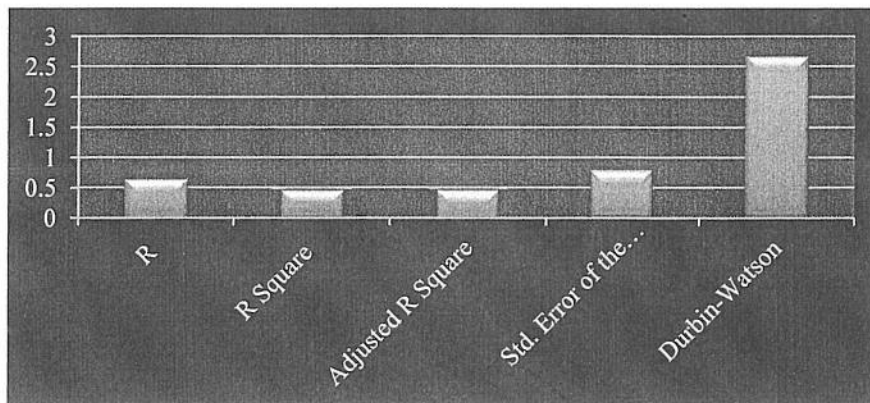


Figure 3: Model Summary

Table 4: ANOVAa

	Model	Sum of Square	df	Mean Square	F	Sig.
1	Regression	324.364	3	42.258	58.642	0.000
	Residual	382.408	272	0.674		
	Total	403.893	274			

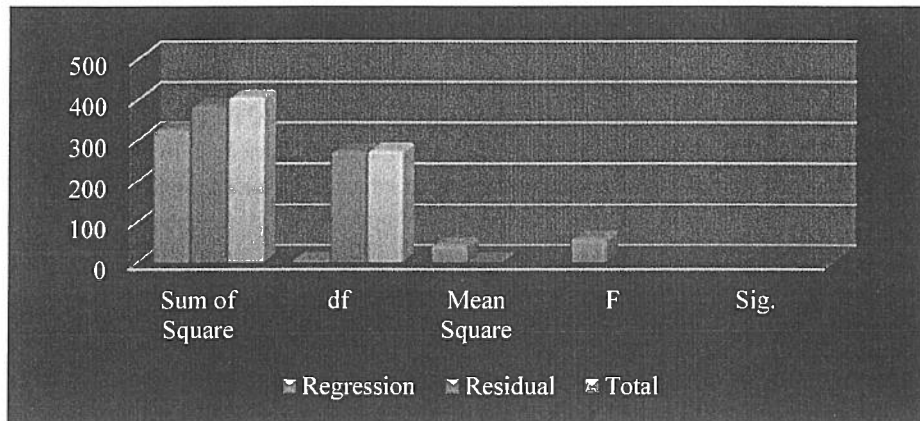


Figure 4: ANOVAa

Table 5: Coefficient

	Model B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
		Std. Error	Beta				Tolerance	VIF
1	(constant)	1.445	0.144		5.098	0.000		
	Accessibility of ICT	0.282	0.036	0.272	3.234	0.000	0.678	2.356
	Usage of ICT	0.176	0.045	0.335	3.700	0.000	0.584	2.348
	Knowledge from ICT	0.062	0.042	0.056	2.320	0.000	0.625	2.248
	Cost of ICT	.523	0.053	0.322	8.703	0.000	0.753	2.250

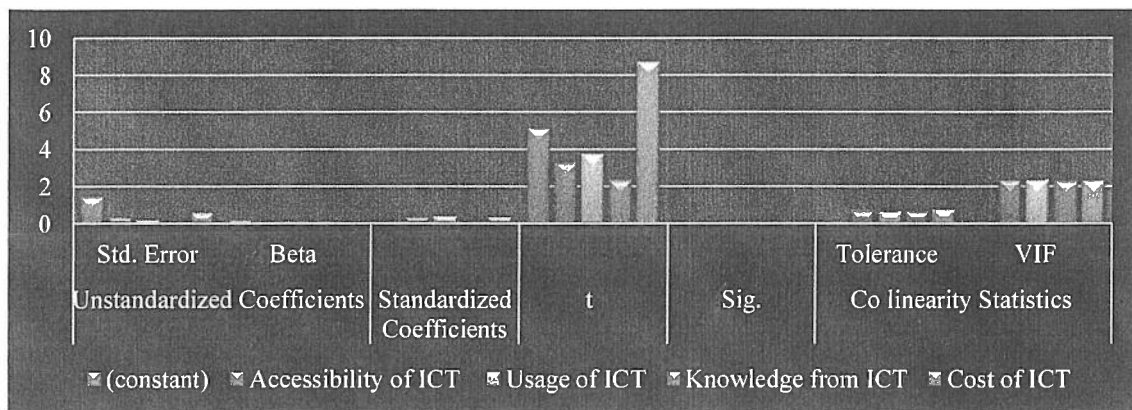


Figure 5: Coefficients

The Change Expansion Element (VIF), which has been used to check for multi-collinearity, should be below 3 for a pleasant run. Here, all VIF considerations are within acceptable bounds, and it is assumed that the variables are free of multi-collinearity.

The reliability of ICT in high level training is the characteristic that is highlighted by the Connection coefficient (R), which for Model 1 is equal to 0.750. The R square, which is 0.562 or 56.2%, is crucial. Additionally, the centrality level in this case offers a 0.000 centrality level, which denotes that it is quite satisfactory.

The cost of ICT component has the highest unstandardized B assessment of 0.412, according to the coefficient table, and the highest essential t value of 9.802, according to the experts. Therefore, the cost of ICT has the greatest influence on how well it is used in higher education.

Utilization of ICT, with a B evaluation of 0.267 and a t assessment of 4.800, will be the second most raised topic after that. With an unstandardized B value of 0.193, openness of ICT ranks third, and information from ICT isn't too far behind. It is also clear from the results that all of the free factors—including availability, use, and cost of ICT—are measurably important and that none of them is below 0.01, indicating that they are all genuinely critical at a 1% importance level. But it is crucial, in order for the theories to make sense, that in each case, flawed hypotheses have been rejected and replacement theories have been accepted.

9. CONCLUSION

Any nation must prioritize higher education because it encourages civic engagement and the majority of the workforce that supports the nation. Frameworks for higher education are evolving swiftly in the future. It is important to ensure both quantity and quality in the educational system, which includes innovative teaching methods and technological advancements. Each and every field, including education, is using ICT. However, because of the problems mentioned in the essay, the use of ICT in education is almost delayed. The increased use of information and communication technologies (ICTs) has changed how higher education is taught and advanced at all levels, leading to increases in quality. With the integration of ICT in the framework of higher education, there are a wide range of potential results. ICT in teaching can support a few systems related to teaching and learning through the transmission of information and the assistance of information, as will generally be understood. ICT makes teaching and learning experiences less difficult due to their expansive and exact nature, and as a result, primary capacities can be offered to take additional advantage of something very similar. In this way, it should be considered that the usage of inventive mechanical preparation techniques is generally linked to the adjustment of the learning results. The educators and chiefs frequently present a simple and proper condition in the higher, foundations, and schools to increase the utilization of ICT.

ICT also focuses on changing the role of teachers during high level training, where, in addition to study hall teaching, different capacities and commitments of the educators would likely lead them to go as virtual assistants for students utilizing electronic media. Using ICT, learning experiences for students will be reinvented in a way that will also inspire them to reason creatively and unrestrictedly. The students can build fulfilling careers and lifestyles in a world that is undeniably engaged. Rapid improvements in technology are demonstrating that ICT employment in the future will substantially aid in preparing. If necessary, it is evident that ICT was used in the preparation. It may only be thought of that the usage of ICT during high level training structures may be a significant accomplishment factor for improvement, teaching, and changing learning structures that can inspire the teachers, directors, and students.

10. FUTURE SCOPE

- The capability of cutting-edge information and correspondence advancements should be used with the ultimate goal of extending the scope of fundamental counsel toward excluded and oppressed social events; and altering study hall instruction.
- To replace restrictive, pricey, and socially awkward academic designs with clever movement frameworks that are more expansive, more adaptable, and generally acceptable with long-term constancy in quality.



• Extra significant organizations are to be delivered through a technique that incorporates both the traditional preparation structure and every possible option presented by the non-formal division in order to make high level training organizations accessible to all that combines poor people, unaware adults, and youths outside the educational framework. Making the higher guidance structure free from various types of exceptional cases and isolation is a compelling argument.

These are the methods for creating a structure that is actually informative and can be used to achieve financial, modest, and all-around contentment. Through such a system, each person will be given access to enhanced and practically endless learning.

REFERENCES

1. Alam, M. M. (2016). Use of ICT in Higher Education. *The International Journal of Indian Psychology*, 3(4), 162-171.
2. Ali, G., Haolader, F. A., & Muhammad, K. (2013). The Role of ICT to Make Teaching-Learning Effective in Higher Institutions of Learning in Uganda. *International Journal of Innovative Research in Science, Engineering and Technology*, 2(8), 4061-4073.
3. S. Chandha, "ICT & Present Classroom Scenario, Effectiveness of CAI Programs on the Achievement in Teaching of Social Studies", *E-Learning: A Boom or Curse*, Twenty First Century Publications, Patiala, 2015. ISBN: 9789380748870
4. G.K. Deol, "Effectiveness of CAI Programs on the Achievement in Teaching of Social Studies", *E-Learning: A Boom or Curse*, Twenty First Century Publications, Patiala, 2015. ISBN: 9789380748870
5. SR Girish, C. Suresh Kumar, "ICT in Teaching-Learning Process for Higher Education: Challenges and Opportunities." *IOSR Journal of Computer Engineering (IOSR-JCE)* 19.4 (2017): pp. 24-28.
6. N. Kaur, (2015) "ICT Culture in Teacher Education", *Transforming Teacher Education in Changing Scenario*, Twenty First Century Publications, Patiala. ISBN: 9789380748856
7. U. Pegu, "Information and Communication Technology in Higher Education in India: Challenges and Opportunities", *International Journal of Information and Computation Technology*, ISSN 0974-2239 Vol. 4, No. 5 (2014), pp. 513-518
8. N.K. Sandhu, (2017) "Integration of ICT in Teacher Education", *Transforming Teacher Education in Changing Scenario*, Twenty First Century Publications, Patiala. ISBN: 9789380748856
9. Kirkwood, A. (2013). ICT in higher education: policy perspectives. In: *ICT Leadership in Higher Education*, 24-26, Hyderabad, India.
10. Shaikh, Z. & Khoja, S.(2013). Higher Education in Pakistan: An ICT Integration Viewpoint. *International Journal of Computer Theory and Engineering*, Vol. 5, No.3, pp. 410-413.
11. Toro, U. & Joshi, M. (2012). ICT in Higher Education: Review of Literature from the Period 2004-2011. *International Journal of Innovation, Management and Technology*, Vol. 3, No. 1, pp.20-23.
12. Adeyemi I. Idowu and Mary Esere, " ICT and higher educational system in Nigeria" - Vol. 8(21), pp. 2021- 2025, 10 Nov 2013 DOI: 10.5897/ERR09.044 ISSN 1990-3839
13. Dr. D. Hassan, "ICT in Higher Education: Opportunities and Challenges", *IGJFRA* Volume: 3 | Issue : 4 | April 2014 • ISSN No 2277 – 8160
14. Kanos Matyokurehwa, "Challenges faced in Implementing ICT in Higher Learning Institutions. A Botswana perspective" *International Journal for Infonomics (IJI)*, Volume 6, Issues 1/2, March/June 2013
15. Upasna Thapliyal, "Equity in Higher Education: Exploring the Role of ICT" - Thapliyal, U. *Educationia Confab* ISSN: 2320-009X Vol. 2 No. 9, Sep 2013



A handwritten signature in blue ink, appearing to read "Pramod Ram Ujagar Tiwari".

The Role of Innovation and Entrepreneurship Education in Promoting the Growth of Students in Higher Vocational Colleges

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Abstract

The far and wide utilization of enormous information is supported by data innovation, which likewise prompts continuous changes in school and college educational programs. The subject of how to assist undergrads with bettering comprehend innovation and entrepreneurship while likewise assisting them with acclimating to the moving economic situations has acquired consideration. Look at the condition of innovation and entrepreneurship instruction for undergrads today utilizing huge information investigation. This paper looks at the expert morals, work hunting thought, innovation and practice capacity development, imaginative reasoning, enterprising mental bearing skill, creative and exhaustive nature of entrepreneurship, and different parts of undergrads' entrepreneurship. By inspecting the condition of innovation and entrepreneurship schooling for undergrads today, we can recognize the positive impacting factors and attempt to reinforce and improve them. This study proposes change ideas and countermeasures considering the ominous impact components. To make a bunch of ceaselessly further developing innovation and entrepreneurship curricular frameworks, the public authority, schools, instructors, and students met up to sum up the innovation and entrepreneurship training model. In this methodology, an imaginative and pioneering ability improvement program that is receptive to the requirements of the cutting-edge world might be laid out, and the sound development of talented people can be energized.

Keywords: Innovation, Entrepreneurship, Vocational Colleges, Construction, Students Ecosystem, Impact.

1. INTRODUCTION

The central objectives of innovation and entrepreneurship (IAE) training in higher vocational schooling are to encourage the creative soul and capacities of undergrads, support the foundation of an imaginative country, and assume a critical part in progressing financial turn of events. The Socialist Faction of China's nineteenth Public Congress report clarifies what it needs, effectively upholds IAE in its endeavors to advance business, and helps ongoing school graduates in tracking down work and beginning their own organizations. Higher vocational education has an inherent benefit of growing IAE education since it is more directly tied to industry and the market than general education.

A ton of scholastics in the nation began to zero in on IAE training. With an end goal to accomplish the organized development of vocational instruction and IAE Training, Bo et al. researched the way of profound joining between proficient instruction and IAE training. Dongmei researched the IAE school system of higher vocational school (HVS) through three perspectives:



modularization, pecking order, and full inclusion involving Jilin Designing Vocational School for instance. IAE instruction for HVS is a deliberate task that is upheld comprehensively. It requires member participation as well as complementary collaboration, and the coupling connection between high level plan and execution merits further consideration.

The standards of uprightness and orderliness in the domain of biology have been applied to teaching method with the idea of China's schooling change, dynamically building the hypothesis of instructive environment and introducing the IAE training ecosystem. IAE Training puts a ton of significance on the improvement of the IAE instruction ecosystem of HVS, albeit the group of scholarly exploration on this point is as yet inadequate. Along these lines, the purported instructive change is still in its early stages. Shunbo and Wei examined how to build the IAE ecosystem utilizing five framework parts as indicated by type credits.

1.1. Problems IAE education

Building the biological exemplification of IAE schooling in colleges and colleges is a difficult significant undertaking with various issues. The IAE schooling climate of HVS in China has come to fruition because of late endeavors, yet impediments actually hold up traffic of its proceeded with development. Sha reasoned that we ought to zero in more on IAE Training subsequent to breaking down the significance and recent concerns with big business school coordinated effort in IAE ability preparing through the examination of ability preparing ways. As indicated by Jian Zhong, the current IAE instruction model at HVS is obsolete, there aren't an adequate number of educators, and the framework isn't flawless; accordingly, it should be additionally gotten to the next level.

Moreover, as per Guofeng, the ongoing IAE school system has a youthful idea, a shoddy administration framework, a disordered inner design, and inadequate financing. To upgrade students' great work and understand the top notch advancement of the school, Yang and Wu further improved and enhanced the IAE schooling system from the parts of liability execution, educational plan framework, showing staff, social climate, and foundation of training stage and strategy ensure.

Before, the understudy division, schools, and school undertaking participation units generally worked together on the showing system while involving the standard training strategies in colleges and colleges. Undergrads who need to seek after entrepreneurship presently have school support. People applied on the web, school venture work fairs were held, and students collected their own cash. Most of students leaned toward work, while simply a little level of students established their own organizations.

1.2. Available Resources

The ecosystem of training is comprised of vertical component coordination and flat subject coordination. It relies upon the help of the public authority and society as asset seepage and strategy. Students actually miss the mark on assets and valuable experience for the general public today. Schooling serves for the most part as a direction. Through guidance and involved preparing, colleges, foundations, teachers, and students increment the creation of achievements and lay out a two-way advancement improvement design. Four viewpoints are utilized to dissect the framework according to the viewpoint of framework hypothesis: limit, state, power, and movement.

1.3. Innovation in the IAE Education Ecosystem of HVS

The training ecosystem is a course of deliberate development that began as a straightforward framework and developed into a perplexing framework. Subject coordination is fundamental for this interaction, requiring complex joint effort between the public authority, instructive establishments, and organizations, among different subjects. Notwithstanding project docking, asset improvement, educator sharing, and different methods, this calls for help from general society, strategy, subsidizing, interest balance, and different variables. Figure 1 portrays the organization of the IAE schooling subject subsystem.



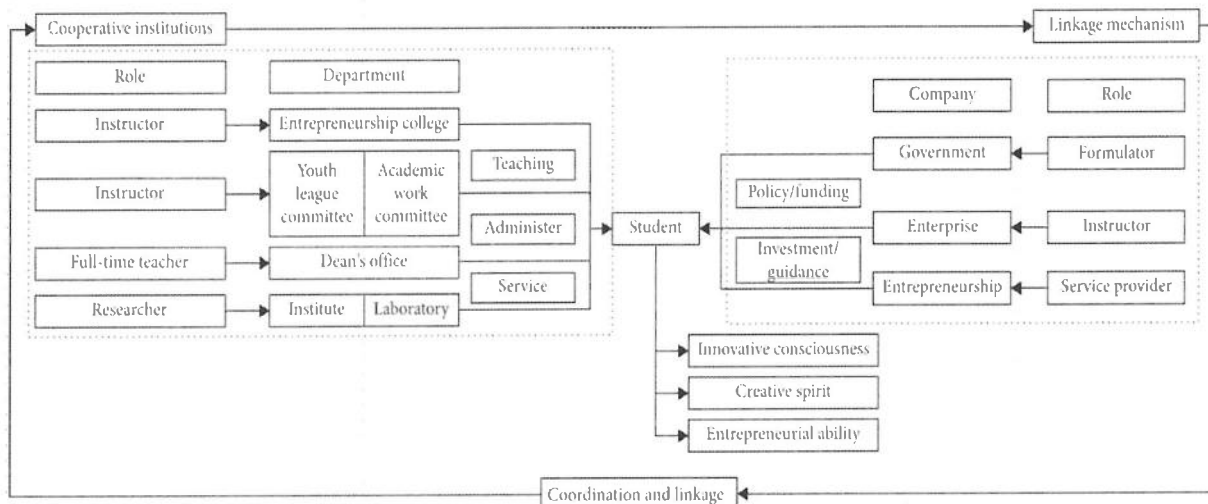


Figure 1: Main subsystem of innovation and entrepreneurship education.

The entrepreneurship school, youth association advisory group, scholastic work board of trustees, scholarly issues office, research establishment, lab, and different divisions, which, thusly, do the jobs of IAE instruction, educating, direction, and logical exploration, are among the colleges and colleges that act as the central matter of direct association and execution. As the maker, advertiser, and lawmaker of IAE training, the public authority lays out the objectives and method for execution in Figure 1 through high level plan. The IAE training improvement technique should be modified to the one of a kind requirements of the establishment and to Cather's hypothetical and practice courses to give a positive climate to the improvement of IAE in colleges and colleges. Organizations fills in as the transporter and foundation of IAE training, giving understudies temporary jobs and certifiable experience, supporting entrepreneurship drives, and establishing positive outside conditions for IAE schooling.

The reconciliation of all framework parts is expected to accomplish the preparation objective, including the assurance of the preparation level and content, the change and supplementation of the ability preparing plan, the improvement of strategy supply, the upgrade of asset beneficial interaction, and the foundation of an assurance arrangement of outer subject coordination and inside division linkage. Figure 2 portrays the IAE instruction ability preparing structure.

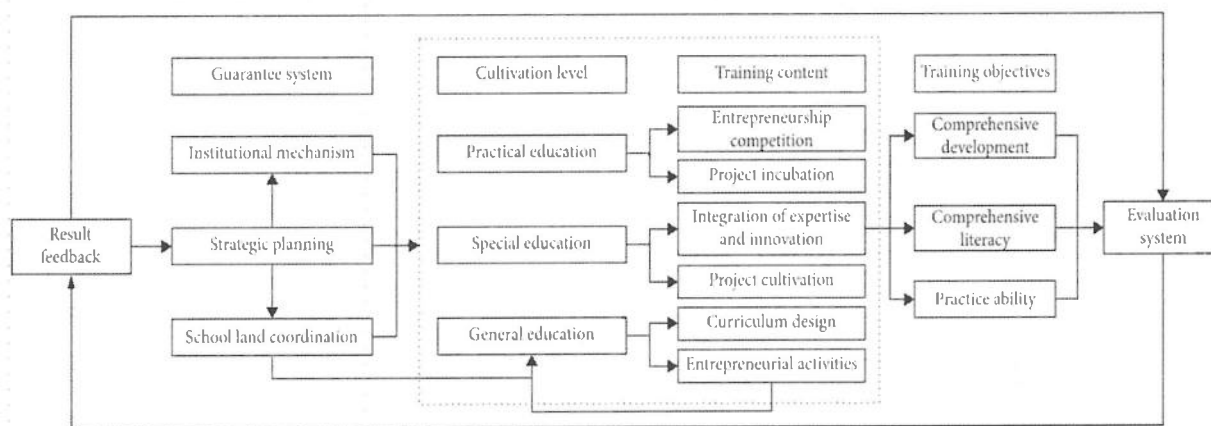


Figure 2: To carry out broad instruction, trademark training, and pragmatic training, decide the preparation level and refine different preparation contents, and accomplish the preparation objective of advancing vocational capacity, far reaching quality, and all-around improvement of higher vocational students, the whole framework supports the public authority, colleges and colleges, undertakings, society, and scholastic circles to shape school nearby coordination. It additionally energizes the public authority and undertakings to partake in the colleges and colleges' schooling stage. At long last, the framework gives input on the outcomes through an assessment framework.



2. LITERATURE REVIEW

Huo (2015), This study focuses on the unique requirements that higher vocational colleges have when it comes to teaching entrepreneurship. In order to properly instruct and prepare aspiring entrepreneurs, educators must possess the fundamental knowledge, abilities, and attitudes outlined in Huo's model of teacher competence. The concept consists of five basic domains: self-development, professional ethics, practical experience, educational skills, and entrepreneurial expertise. For institutions looking to hire and train qualified instructors for their entrepreneurship programmes, this framework offers helpful advice.

Zhou & Wu (2018), This study highlights how crucial it is to get college students ready for the quickly evolving global economy, where entrepreneurship and creativity are essential for success. They contend that current educational methods fall short and advocate for a more all-encompassing strategy that combines classroom instruction with real-world application. The study suggests a number of tactics to improve college students' capacity for innovation and entrepreneurship, such as encouraging a climate of creativity and risk-taking, offering chances for experiential learning, and putting students in touch with mentors and successful businesspeople.

Huang, J.Y. (2019), examined methods for increasing IE education for colleges' capacity. The study determined a number of crucial steps that should be taken to improve the capacity of IE education, including faculty development, curriculum reform, and cooperation with business partners. Huang underlined the necessity for universities to provide an all-encompassing IE curriculum that blends theoretical understanding with real-world application. He also emphasised how crucial it is to give faculty members opportunities for professional development so they may acquire the abilities and know-how needed to instruct IE courses. In addition, Huang promoted tighter cooperation between academic institutions and business associates to establish student internship and mentorship programmes.

Yang, Y. & Shang, Y.T. (2020), examined, in the direction of high-quality development, the importance, direction, and development route of the construction of the IE education system in higher vocational colleges. According to the authors, IE education is critical for developing students' entrepreneurial and innovation skills, which are necessary for success in the contemporary economy. A framework for creating a top-notch IE education programme in vocational colleges was put forth by them. It calls for creating a mission and vision statement, creating a thorough curriculum, offering opportunities for hands-on training, and encouraging an atmosphere that is conducive to entrepreneurship and innovation.

Li, J. (2019), investigated how innovation and entrepreneurship (IE) education is being implemented in Chongqing, China's vocational colleges. The curriculum design, instructional strategies, and student learning outcomes were the main subjects of the study. Li outlined a number of obstacles that IE education in technical colleges must overcome, including a dearth of skilled teachers, constrained funding, and insufficient opportunities for students to gain real-world experience. Additionally, the report offered suggestions for raising the standard of IE instruction at vocational colleges, including as creating a more thorough curriculum, offering more opportunities for hands-on training, and hiring and preparing skilled teachers.

3. RESEARCH METHODOLOGY

The objective of innovation and entrepreneurship training in colleges and colleges is to foster students' soul of entrepreneurship and innovation cognizance while likewise furnishing them with a down to earth schooling that will assist them with working on by and by later on. Given the speed at which internet business is developing and data innovation is refreshing, market-shrewd undergrads will undeniably zero in on developing business sectors and give close consideration to showcase open doors. Undergrads today are wildly free, determined by the craving for personalisation, valiant even with challenge and rivalry, and more prepared to deal with the business type of significant worth chain revamping and modern chain reconstruction achieved by large information. Enormous information offers a proving ground for undergrads' turn of events.

4. DATA ANALYSIS AND RESULT

Students in school don't think imaginatively or innovatively enough. The review results demonstrates that there are tremendous contrasts in understudies' impression of innovation and entrepreneurship training. Most male undergrads feel that innovation and entrepreneurship are approaches to working that coordinate reasoning and doing to make the most of market valuable open doors. Most females trust it's to incorporate their own assets and make another course to errands connected with endurance.



Table 1: The way that courses on innovation and entrepreneurship are conceptualised by college students.

Options	Frequency	
	Male	Female
A group begins a totally different business all alone	11.72%	10.13%
A way of thinking, reasoning, and acting	36.01%	24.67%
Innovation is the groundwork of entrepreneurship, entrepreneurship is the epitome of innovation	23.85%	26.79%
Begin a business with your own assets	28.31%	38.39%

The mental dissemination of entrepreneurship and innovation schooling among undergrads is displayed in the table, broken somewhere near orientation. The choices offered represent various viewpoints on entrepreneurship. 36.01% of male students link entrepreneurship to a specific style of thinking, reasoning, and behaviour, whereas 11.72% of them see the value of a group launching a new company on their own. Furthermore, compared to 28.31% of male students who emphasise beginning a firm with one's own resources, 23.85% of male students believe that invention is the cornerstone of entrepreneurship. However, female students had somewhat different preferences: 24.67% believe that entrepreneurship is associated with a particular mindset, and 10.13% embrace the idea of a team beginning a new firm independently. Remarkably, compared to their male peers, a larger proportion of female students (38.39%) think that launching a business on their own is a good idea. Generally speaking, the table shows how undergrads' mental viewpoints on innovation and entrepreneurship instruction vary reliant upon their orientation.

Table 2: Table showing the distribution of genders in entrepreneurship and innovation.

X\Y	money	contacts	market	policy	profile	other
Male	72.83%	78.11%	76.95%	56.25%	52.61%	19.41%
Female	76.41%	79.69%	81.13%	58.68%	63.43%	31.85%

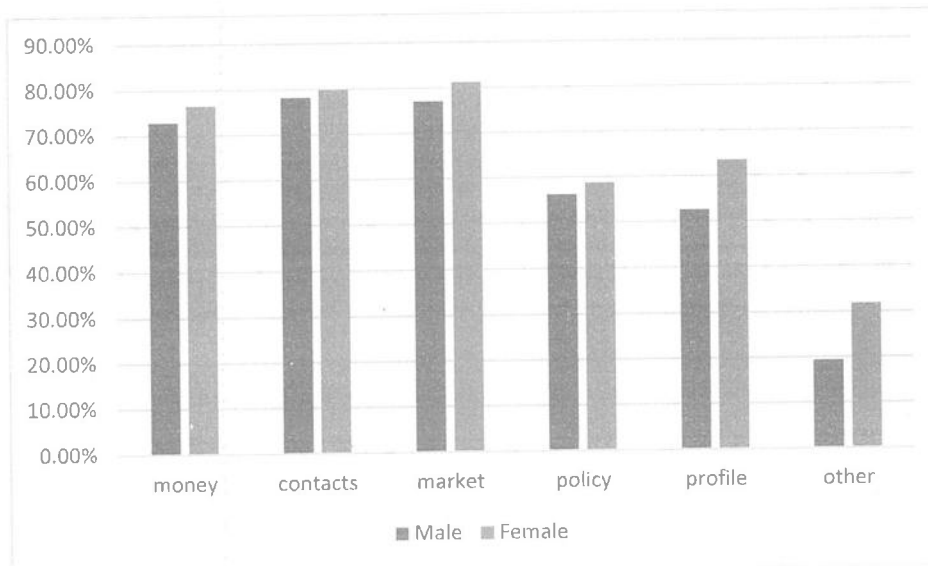


Figure 3: Table showing the distribution of genders in entrepreneurship and innovation.



With regard to innovation and entrepreneurship, the table shows a gender distribution analysis across a number of factors, which are indicated by the columns "money," "contacts," "market," "policy," "profile," and "other." The percentages in each cell show how many men and women participate in these areas. It's interesting to note that women outnumber men in every category; the biggest differences are found in "market," "policy," and "profile." The percentage of females in financial aspects is 76.41%; in networking or connections, it is 79.69%; in market-related activities, it is 81.13%; in policy involvement, it is 58.68%; in profile-building activities, it is 63.43%; and in other undefined aspects, it is 31.85%. These results imply that, in the environment under study, women are marginally more engaged in entrepreneurship and innovation on a number of fronts, though the differences between the sexes are not very great. The information emphasises how crucial it is to continue tackling gender gaps in entrepreneurship and encouraging diversity in many areas of the corporate world.

Table 3: Male and female student distribution across various course types.

X\Y	University Innovation and Entrepreneurship courses	Their own part-time	Entrepreneur lectures and videos	Innovative and entrepreneurial community activities	other
Male	19.40%	46.13%	17.83%	11.36%	5.24%
Female	18.10	52.56%	12.70%	11.57%	5.09%

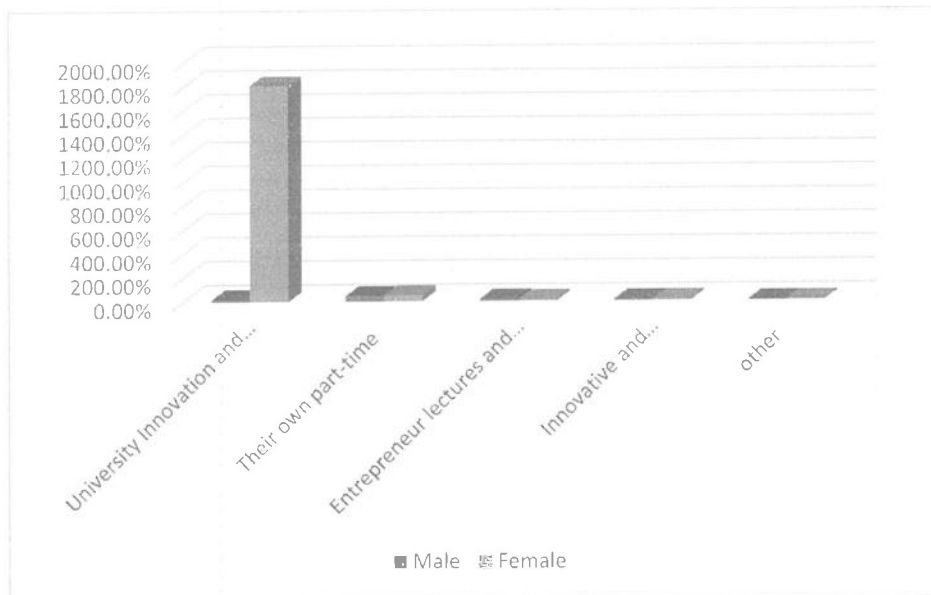


Figure 4: Male and female student distribution across various course types.

With an emphasis on College Innovation and Entrepreneurship courses, their own part-time drives, Business person talks and recordings, support in imaginative and enterprising local area exercises, and other vague classes, Table 3 shows the circulation of male and female students across various course types at the college. According to the data, out of all male students, 19.40% are enrolled in University Innovation and Entrepreneurship courses, 46.13% are working on their own side projects, 17.83% watch lectures and videos about entrepreneurship, 11.36% are active in innovative and entrepreneurial community projects, and 5.24% are classified as "other." Female students, on the other hand, show somewhat different preferences: 18.10% take University Innovation and Entrepreneurship courses; 52.56% work part-time; 12.70% watch lectures and videos on entrepreneurship; 11.57% participate in innovative and entrepreneurial community activities; and 5.09% fall into the "other" category. The table sheds light on the gender distribution of different academic and entrepreneurial endeavours, emphasising subtle variations in the extracurricular activities and course selections of male and female students.



Table 4: Distribution of course materials on innovation and entrepreneurship.

XW	marketing	Financial and tax	Personalized coaching	Human communication skills	Entrepreneurial Case Analysis	Entrepreneurial opportunities	other
Male/a freshman	78.16%	34.57%	45.47%	65.43%	52.71%	50.89%	20.01%
Male/a sophomore	56.70%	52.26%	68.68%	67.18%	50.76%	53.71%	16.40%
Male/junior	63.90%	69.09%	68.06%	77.30%	42.25%	32.97%	14.41%
Male/senior	89.31%	57.16%	71.45%	82.13%	67.85%	64.27%	28.56%
Female/a freshman	63.02%	58.72%	50.01%	67.41%	60.85%	63.06%	13.03%
Female/sophomore	69.21%	53.87%	63.73%	71.41%	59.36%	63.72%	24.15%
Female/junior	67.54%	54.72%	71.77%	76.06%	64.98%	67.50%	27.37%
Female/senior	86.38%	54.57%	54.57%	90.90%	59.10%	68.15%	18.20%

The percentages of students' participation or performance in an entrepreneurial education programme across several categories, broken down by gender and academic year, are displayed in the table. XW (an unidentified factor), marketing, tax and financial expertise, individualised coaching, interpersonal communication abilities, entrepreneurial case analysis, entrepreneurial prospects, and a "other" category are among the categories. Male and female students at various academic levels (freshman, sophomore, junior, and senior) are further subdivided into the data. When the data is analysed, some trends show up. When compared to other male cohorts, male seniors, for instance, typically have larger percentages in most categories, suggesting that over their academic careers, they may develop or specialise in their entrepreneurial talents. Senior female students typically do well in subjects like marketing and interpersonal communication. In order to improve students' entrepreneurial education experience, educators and programme developers can benefit from knowing the strengths and weaknesses of students across genders and academic levels through the percentages in each category. This information can help them customise their teaching strategies and support networks.

Table 5: Obstacles to innovation and the teaching of entrepreneurship.

XVY	External objective environmental problems	High risk, low success rate	Insufficient start-up capital	Lack of experience, lack of ability
Male/a freshman	14.53%	27.28%	21.80%	36.38%
Male/a sophomore	17.89%	40.32%	16.40%	25.35%
Male/junior	12.35%	35.06%	16.50%	36.10%
Male/senior	21.41%	42.84%	10.70%	24%
Female/a freshman	13.06%	28.28%	21.72%	36.98%



Female/sophomore	10.97%	34.09%	17.60%	37.37%
Female/junior	15.40%	41.05%	16.25%	27.33%
Female/senior	27.30%	22.71%	27.28%	22.75%

Based on an individual's gender, academic year (freshman, sophomore, junior, or senior), and the associated percentage distribution for particular obstacles, the table breaks down the perceived external objective environmental concerns that they confront. There are four main problems listed: "Lack of experience, lack of ability," "Insufficient start-up capital," and "High risk, low success rate." The percentage of respondents who classified each topic as a significant worry within a certain gender and academic year category is indicated by the figures in each cell of the table. Among male freshmen, for example, the greatest proportion of respondents (36.38%) voiced concerns regarding "Lack of experience, lack of ability," and 14.53% mentioned "High risk, low success rate" is particularly noteworthy. Conversely, senior females expressed serious concerns about "Lack of experience, lack of ability" (22.75%) and "Insufficient start-up capital" (27.30%). Upon examining the table comprehensively, it is evident that particular difficulties are more relatable to particular demographic cohorts. For instance, seniors who identify as female seem to be most worried about financial limitations, whereas seniors who identify as male are more worried about taking on high-risk tasks and having insufficient expertise or skill. These observations can be helpful in customising resources and assistance to address the unique difficulties encountered by various groups within the community under study.

4.1. Positive Impact

Innovation and entrepreneurship education can boost practical skills. Schools should increase their education to promote students' creative endeavours and creative enterprises. Each year, colleges and universities host creative entrepreneurial class skills competitions, operate business incubators, open creative entrepreneurial activities, and offer rich, vibrant curricula that enhance college students' creative entrepreneurial experiences. Innovation and entrepreneurship education may boost students' mental health. Different phases of innovation and entrepreneurship raise different issues. A creative entrepreneurship education improves pupils overall. Throughout college, the goal is to foster creativity in education, replicate real-world business situations, allow students to interact with each other, experience real entrepreneurship, play role-playing, develop self-employment skills, gain practical experience, and help each other in the simulated business. Innovation and entrepreneurship instruction make understudies more cutthroat. Students ought to find out about innovation and entrepreneurship to foster their pioneering perception, comprehend the difficulties business visionaries face, and track down answers for become autonomous and serious.

4.2. Negative Impact

The learning of other courses will be impacted by innovation and entrepreneurship practice activities. Students in college should prioritise their coursework. Entrepreneurship and innovation are limited to college life. Don't make them your entire existence. It is easy for college students to lose interest in innovation when they experience failure in entrepreneurship. College students lack adequate social experience, and innovation and entrepreneurship are risky endeavours. Failure to accurately analyse the existing market condition is likely to result in entrepreneurship failure in the face of intense market competition pressure on entrepreneurship. Pupils with little psychological fortitude will suffer, as well as a loss of bravery and inventive consciousness.

5. CONCLUSION AND RECOMMENDATIONS

Undergrads' schooling in innovation and entrepreneurship is by and large progressively impacted by the headway of data innovation and the beginning of the enormous information period. The public authority, instructive establishments, teachers, and organizations ought to acknowledge their different jobs in the training system and work pair to assist the schooling system with adjusting to the evolving times. The public authority ought to acquaint various strategies with empower entrepreneurship, colleges and colleges ought to make a plan framework, teachers ought to show entrepreneurship hypothesis in a calculated manner, organizations ought to offer a certifiable stage for rehearsing entrepreneurship, and educators ought to lead precise entrepreneurship hypothesis schooling. To foster the elements of innovation and entrepreneurship schooling in colleges, all partners team up.



Recommendations:

- **Enhance the system that fosters innovation and entrepreneurship:** Government organizations ought to attempt to construct and further develop the credit framework all the more rapidly, cultivate a climate that is open, just, and reasonable for the market, and urge understudies to engage in the flood of innovation and entrepreneurship.
- **Give government policies and systems their due:** All levels of government should strongly encourage college students' innovation and entrepreneurship by providing financial support and convenient policies, such as a number of preferential conditions. Records and length of service are two topics that receive special attention.
- **Enhance family support and entrepreneurship education:** Colleges and colleges ought to constantly attempt to further develop the learning climate, increase present expectations for innovation and entrepreneurship guidance, bring novel thoughts into the educational program and the homeroom, urge students to acquire hypothetical information from the courses and assets, and lay out a strong starting point for down to earth insight. Use the assets given by the local area, the instructive organization, and the family to encourage the prosperity of understudies.

REFERENCES

1. Dongmei, J. (2021). Exploration of innovation and entrepreneurship education in higher vocational colleges. *Educational Observation*, 10(34), 36–38.
2. Ge, Z. (2021). Construction of innovation and entrepreneurship education ecosystem in higher vocational colleges. *Science, Education Hui (Chinese Journal)*, 10, 145–148.
3. Huang, J.Y. (2019). Countermeasure Research of College Innovation and Entrepreneurship Education Capacity Building [J]. *Science and Education Guide*, (11):8-9
4. Jianzhong, L. (2021). Construction and practice of innovation and entrepreneurship education system in higher vocational colleges in the "Internet +" Era. *Comparative Research on Cultural Innovation*, 5(28), 78–81.
5. Kumbhare, S. , B.Kathole, A. , Shinde, S., "Federated learning aided breast cancer detection with intelligent Heuristic-based deep learning framework", *Biomedical Signal Processing and Control* Volume 86, Part A, September 2023, 105080 <https://doi.org/10.1016/j.bspc.2023.105080>
<https://www.sciencedirect.com/science/article/pii/S174680942300513X>
6. Li, J. (2019). Research on the Implementation Status of Innovation and Entrepreneurship Education in Vocational Colleges in Chongqing [D]. Chongqing: Southwest University, 29-30.
7. Long, S. D. (2021). On the construction of the innovation and entrepreneurship education ecology system in higher vocational colleges. *Journal of Taiyuan City Vocational and Technical College*, (1), 100–102.
8. Luo, Y., & Genqiang, W. (2022). The impact of entrepreneurship and innovation education and professional course education on college students' employment. *Industry and Technology Forum*, 21(3), 83-84.
9. K. N. Vhatkar and G. P. Bhole, "Optimal container resource allocation in cloud architecture : A new hybrid model," *Journal of King Saud University - Computer and Information Sciences*, vol. 34, no. 5, pp. 1906–1918, 2022, doi: 10.1016/j.jksuci.2019.10.009.
10. Miaobing, L. (2021). Research on the construction of innovation and entrepreneurship curriculum system in higher vocational college under the vision of education ecology. *Journal of Guangdong Transportation Vocational and Technical College*, 20(4), 65–68.
11. Sha, Y. (2021). A preliminary exploration on the training way of innovative and entrepreneurial talents in higher vocational colleges under school-enterprise cooperation. *Journal of Wuhan Shipbuilding Vocational and Technical College*, 20(4), 41–43 + 50.
12. S. Nagaraj ,Atul B. Kathole ,Leena Arya,Neha Tyagi ,S. B. Goyal, Anand Singh Rajawat ,Maria Simona Raboaca ,Traian Candin Mihaltan ,Chaman Verma and George Suciuc , "Improved Secure Encryption with Energy Optimization Using Random Permutation Pseudo Algorithm Based on Internet of Thing in Wireless Sensor Networks", *Energies* 2023, 16(1), 8; <https://doi.org/10.3390/en16010008>. <https://www.mdpi.com/1996-1073/16/1/8>



13. uofeng, L. (2020). Research on innovation and entrepreneurship education system in higher vocational colleges from the view of education ecology theory. *Modern Vocational Education*, 43, 66-67.
14. Wang, B., Qijing, Z., & Xueliang, F. (2021). Path of the deep integration of higher vocational innovation and entrepreneurship education and professional education. *Journal of Ningbo Vocational and Technical College*, 25(6), 15-18.
15. Wang, S., & Wei, J. (2021). Analysis on the construction of innovation and entrepreneurship education ecology system in vocational colleges based on type characteristics. *Chinese College Students Employment*, 20, 54-58.
16. Atul B. Kathole, Jayashree Katti, Dharmesh Dhabliya, Vivek Deshpande, Anand Singh Rajawat, S. B. Goyal, Maria Simona Raboaca, Traian Candin Mihaltan, Chaman Verma and George Suci, "Energy-Aware UAV Based on Blockchain Model Using IoE Application in 6G Network-Driven Cybertwin" *Energies* 2022, 15(21), 8304; <https://doi.org/10.3390/en15218304>. <https://www.mdpi.com/1996-1073/15/21/8304>
17. Xiaona, S. (2022). Research on the path of entrepreneurship and innovation education of nursing specialty in higher vocational colleges under the background of entrepreneurship and innovation. *Heilongjiang science*, 13(1), 124-125.
18. K. N. Vhatkar and G. P. Bhole, "Improved rider optimization for optimal container resource allocation in cloud with security assurance," *International Journal of Pervasive Computing and Communications*, vol. 16, no. 3, pp. 235-258, 2020, doi: 10.1108/IJPC-12-2019-0094.
19. Xiaoyan, L. (2021). Research on innovation and entrepreneurship education system in higher vocational colleges. *Writer World*, 7, 186-187.
20. K. N. Vhatkar and G. P. Bhole, "Particle swarm optimisation with grey wolf optimisation for optimal container resource allocation in cloud," *IET Networks*, vol. 9, no. 4, pp. 189-199, 2020, doi: 10.1049/iet-net.2019.0157.
21. Yang, M. (2021). The exploration of the innovation and entrepreneurship education ecology system in colleges and universities—takes Sichuan vocational College of Cultural Industry as an example. *Investment and Entrepreneurship*, 32(20), 29-31.
22. Yang, Q., & Wu, Z. (2021). Build an innovation and entrepreneurship education system in higher vocational colleges to help with the high-quality development of schools. *Journal of Urumqi Vocational University*, 30(2), 57-60.
23. Yang, Y., Shang, Y.T. (2020). Significance, Orientation and Path of Innovation and Entrepreneurship Education System Construction in Higher Vocational Colleges under the guidance of high-quality Development [J]. *Education and Careers*, (8):68-73,



A handwritten signature in purple ink, appearing to read "Pramod".

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E-Commerce Management And Ai Based Dynamic Pricing Revenue Optimization Strategies

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Abstract

Online pricing is direct and might be the primary considers a purchase. Despite the fact that pricing unpredictability is frequent and used to support sales and productivity, online firms benefit from it. Business success depends on pricing, especially in membership-based models. Albeit successful before, quickly changing market dynamics are making static pricing structures unsuitable for the present businesses and causing significant issues. Computer based intelligence has been used to improve pricing systems in response to these difficulties. Improving e-commerce pricing techniques emphasizes picking the right price over the lowest. The review focuses on inventory-led e-commerce businesses, however online marketplaces without inventory can benefit from the concept. The review uses factual and machine learning methods to anticipate item purchases utilizing adaptive or dynamic pricing. This system is based on several information sources that gather visit attributes, guest details, purchase history, online information, and contextual bias of knowledge. Interestingly, the examination forecasts customer segment purchases higher than individual consumers. Further extensions will be developed after the current research results are released to personalize adaptive pricing and purchase prediction. The review's answer landscape covers machine learning, enormous information, and web mining.

Keywords: E-Commerce, Management, Artificial Intelligence, Dynamic Pricing, Optimization Strategies.

1 INTRODUCTION

In the fast-paced world of contemporary business, pricing strategies have undergone significant shift, especially for subscription-based models. While traditional static pricing techniques have proven effective in the past, they today face unanticipated obstacles due to the rapid and unpredictable changes in market dynamics. Given the complexity of today's business environments, pricing strategies must be adaptable enough to change course swiftly when necessary. In response to these challenges, artificial intelligence (AI) has emerged as a major

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affects how companies adjust their pricing structures in response to shifting consumer preferences and market situations.

1.2 AI's Place in Dynamic Pricing

Artificial intelligence (AI), especially when applied to machine learning algorithms, has exceptional powers that make it essential for e-commerce pricing optimisation.

- **Pattern Recognition:** AI systems are able to find intricate patterns in large datasets, providing important new information on consumer behaviour, industry trends, and demand swings.
- **Continuous Learning:** As a result of machine learning models' ability to adapt and learn from new data, pricing strategies are able to change as market conditions do.
- **Predictive Analytics:** By predicting future demand, AI can assist you in proactively modifying prices to satisfy client demands and revenue targets.
- **Automation:** AI-driven dynamic pricing gives you a competitive edge by enabling you to react to market developments in real time. It is automated and can run around the clock.

2 LITERATURE REVIEW

Shah et al., (2020) outlined how various businesses are pursuing the integration of technological applications into their operations at the same time that technical advancements and innovations take shape in the modern world. By generating more money, this strategy aims to increase the company's income and maintain its viability in the face of shifting technology dynamics. The most promising applications in the contemporary corporate environment are machine learning (ML) and artificial intelligence (AI) characteristics because of their adaptability to the optimisation and improvement of product pricing and revenue management strategies.

Weber & Schütte, (2019) explained any organization's revenue management strategy is built on dynamic pricing. Price adjustments are made in accordance with the current conditions, which include market competitiveness and real-time demand. Artificial Intelligence (AI)-powered machine learning technologies facilitate the development of algorithms that are critical to the generation of large amounts of data and enable businesses to react quickly to changes in the market. The organisations that have used this technology have seen a rise in revenue production as a result of these modifications that help assure price optimisation.

Bakakeu et al., (2018) Due to the evolving nature of human behaviour, research on the business landscape has revolutionised, leading to an unparalleled level of dynamism. On the other hand, as a result of technological progress, people's behaviour is changing quickly as they discover new and inventive items that are offered by diverse companies. Additionally, as technology advances and consumer behaviour changes, so do economic conditions, geopolitical developments, and advancements in technology, all of which contribute to the development of pressurised pricing models. The development of the several indispensable instruments necessary for negotiating the convergence of the numerous elements impacting pricing strategies has been aided by the advent of AI and ML. The use of technology, particularly AI-driven technologies, improves real-time data analysis and helps identify the different trends that are crucial for the illusion of human observations. In addition, compared to different traditional approaches, the technologies help the organisation impose precise and effective pricing plans.



The first and most significant step in the framework process is the collection of information from numerous information sources combined into a single integrated database. We used a piece of the information from an online marketplace for our review. The schemas of the two datasets used in the review are displayed in Table 1.

Table 1: The primary schema is associated with the exchange database, which holds the customer's all's exchange records, and the second schema is associated with the offer database, which records different price reduction offers for different items, categories, and businesses.

CUSTOMER ID	Offer ID
<ul style="list-style-type: none"> • Store Chain • Store Department • Item Category • Item Organization • Item Brand • Purchase Date • Item Size • Item Measures • Purchase Amount • Purchase Sum 	<ul style="list-style-type: none"> • Item Category • Item Amount • Item Organization • Offer/price Value • Item Brand

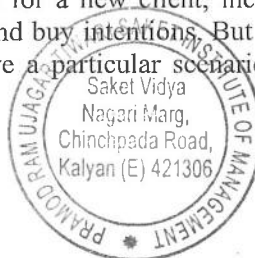
Categorical information for some variables made up most of the exchange database, with different IDs corresponding to aspects like client, chain, department, category, firm, brand, size, and measure. Interestingly, the sum and amount of purchases were viewed as persistent variables in this dataset. Similar to this, only the offer value and product quantity in the offers database were continuous; all other variables were categorical. 350 million transactions totalling about 2.4 million unique clients were recorded in the database. Customers who were provided and took advantage of promotions were the subject of our analysis, yielding a dataset consisting

3.2 Pre-Processing Data

Processing every one of the collected information as indicated by the fact that it is so relevant to the price prediction is what this step entails. Pre-processing is additionally necessary to organize information sheets for specific logical projects, for example, Excel, SAS, and R, that were utilized in the review. To improve the information's meaning, extra variables were added because it wasn't initially ceaseless. Purchase by offer (POR), purchase by category (PCT), purchase by amount (PQT), purchase by organization (PCY), purchase by brand (PBD), and purchase by channel (PCN) are some of the derived variables. These variables were calculated by adding up to the number of offers, categories, sums, companies, brands, and channels that were taken into consideration for the client's purchased items, as well as by aggregating the aggregate sum of purchases made by that specific consumer. The two respective sums were divided to get the last values. Outliers were removed, and the information was combined for a number of scientific procedures to guarantee information precision.

3.3 Selection of Attributes

Choosing the right criteria at this stage is essential to carrying out client segmentation. Several attributes from the chosen data should be used for a new client, including visit attributes, demographic profiles, context, past purchases, and buy intentions. But the current study only looks at repeat clients who were picked to give a particular scenario for the project. The



Variable 1 – PQR	0.0672*	0.025*	0.04370	0.04260*
Variable 2 – PCT	0.423795*	0.255*	0.26882*	0.16328*
Variable 3 – PQT	0.202210	0.245*	0.2570*	0.3455*
Variable 4 – PCY	0.439665*	0.155	0.28220*	0.42870*
Variable 5 – PBD	0.315870*	0.105*	0.2120	0.2750*
Variable 6 – PCN	3.137065*	0.895*	1.21370	1.43747
R-Square	0.75	0.85	0.80	0.90
Price Range	\$400- 400	\$1000-1500	\$2000-4000	\$20000-25000

3.6 Modelling Predictively

This stage uses Strategic Regression to predict a client's propensity to purchase or not, given a target price range and an appropriate consumer segment identified through dynamic pricing approach. Picking a twofold predictor is consistent with the above worldview and helps determine the customer's last buying behaviour. Utilizing the dataset, the results of the strategic regression were calculated, considering the buying power and price prediction from multiple regression. A preparation set and a test set were created from the complete dataset in a 4:1 proportion.

4 DATA ANALYSIS AND RESULTS

The system designed for price prediction is examined for purchase forecasts and the possible income gains. Our suggested model shows a more efficient revenue generation system with less mistakes in expecting client purchases when compared to a circumstance where the same item is given at a set price for a specific customer bunch. The results are shown in Figure 2. This approach is quite good at predicting the purchasing behaviour of customers. Supervised learning will get more accurate with time as more data is gathered, which will help with more accurate purchasing behaviour predictions.

Table 4: Skilled at correctly predicting the purchasing habits of customers

	Percentage increase	Error in Purchase	Error in purchase price	RMSE
Cluster 1	0.16	0.15	0.19	0.0
Cluster 2	0.2	0.29	0.15	0.1
Cluster 3	0.1	0.20	0.16	0.2
Cluster 4	0.3	0.14	0.4	0.4



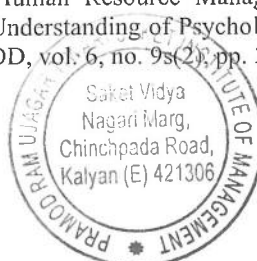
The suggested dynamic pricing model offers a better revenue generation system and less mistake in estimating consumer purchases when compared to a scenario with fixed price for particular customer groups. The results, illustrated in Figure 4, feature the possible monetary advantages and enhanced consumer targeting attained through the dynamic pricing system integrating all of this.

5 CONCLUSION

AI-powered dynamic pricing schemes for subscription features mark a dramatic change in the way companies handle price structures. Artificial intelligence and real-time data analysis enable businesses to adjust prices in response to shifting consumer needs and market conditions. Dynamic pricing is expected to play an increasingly bigger role in contemporary corporate strategies as AI technologies develop, especially in the subscription economy. This entails using dynamic pricing to establish a reasonable price range for clients. This study concludes by presenting a comprehensive framework that uses a mix of measurable and machine learning techniques to forecast online client purchases through dynamic pricing. The significance of personalized and adaptive pricing is highlighted by the emphasis on enhancing pricing strategies on ecommerce stages, with an attention on picking the most suited purchase price rather than the very cheapest. K-means clustering is used to help with consumer segmentation by recognising discrete client groups with different purchase patterns. The dynamic pricing model creates customised price ranges with the help of regression models for every cluster, enabling more accurate targeting. By forecasting consumer purchases within these personalised price ranges, logistic regression strengthens the framework even more and adds to a more complex knowledge of consumer behaviour. Examining dynamic pricing techniques in real-time, especially when the market is changing quickly, could improve the framework's effectiveness. Increasing the range of data sources beyond the variables that are now used could yield a more thorough picture of consumer behaviour. The adaptability of the suggested framework would be enhanced by an evaluation of its applicability across various industries and sectors. Lastly, as dynamic pricing changes to adapt to changing consumer landscapes, ethical factors including fairness, transparency, and customer trust deserve more investigation. Essentially, this framework anticipates the creation of more advanced models and approaches that are in step with the ever-changing landscape of online consumer behaviour and e-commerce, thereby providing a strong basis for future research endeavours.

REFERENCES

1. Antonopoulos, I., Robu, V., Couraud, B., Kirli, D., Norbu, S., Kiprakis, A., Flynn, D., ElizondoGonzalez, S., & Wattam, S. (2020). A systematic review of Artificial Intelligence and machine learning approaches to energy demand-side response.
2. Bakakeu, J., Tolksdorf, S., Bauer, J., Klos, H.-H., Peschke, J., Fehrle, A., Eberlein, W., Büner, J., Brossog, M., Jahn, L., & Franke, J. (2018). An artificial intelligence approach for online optimization of flexible manufacturing systems. *Applied Mechanics and Materials*,
3. Brunato, M., & Battiti, R. (2020). Combining intelligent heuristics with simulators in hotel revenue management. *Annals of Mathematics and Artificial Intelligence*,
4. Calvano, E., Calzolari, G., Denicolò, V., & Pastorello, S. (2020). Artificial Intelligence, algorithmic pricing, and collusion. *American Economic Review*
5. Das, S., Dey, A., Pal, A., & Roy, N. (2015). Applications of Artificial Intelligence in Machine Learning: Review and prospect. *International Journal of Computer Applications*,
6. Dash, B., & Gatharia, J. (2015). Impact of Digital Transformation on Organizational Behaviors.
7. Ncha Sharma, P. William, Kushagra Kulshreshtha, Gunjan Sharma, Bhadrappa Haralayya, Yogesh Chauhan, Anurag Shrivastava, "Human Resource Management Model with ICT Architecture: Solution of Management & Understanding of Psychology of Human Resources and Corporate Social Responsibility", *JRTDD*, vol. 6, no. 9s(2), pp. 219–230, Aug. 2023.



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Innovative Human Resource Management Practices: Cultivating Employee Dedication And Productivity

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Abstract

As part of the research project, a collection of Human Resource Management (HRM) practises will be proposed, and the function that these practises play in organisational innovation will be investigated. The research investigates human resource management practises that do not overlap with one another. It employs a quantitative methodology and incorporates easy sampling in order to collect data from 200 individuals working in the service industry across five sales and service centres. Both commitment and innovation-driven human resource management practises have been found to have a good influence on organisational innovation, according to the most important studies. As indicated by the discoveries of the review, in any case, the High-Performance Work System (HPWS) doesn't considerably affect the development that happens inside associations. The outcome is that top administration ought to embrace integrative human asset the board procedures to effectively deal with the issues that are given by the consistently changing person of associations, determined to accomplish a combined effect in driving hierarchical development. In conclusion, the research emphasises the significance of particular human resource management practises when it comes to encouraging organisational innovation. These practises include dedication and innovation-driven methods. It also shows that a strategy that is universally applicable, such as HPWS, might not be as effective in promoting innovation as it claims to be. As a result, businesses are strongly urged to modify their human resource management strategies in accordance with the specific requirements of their personnel as well as the obstacles that are provided by their particular sector or setting.

Keywords: Employee Dedication, Practices, Human Resource Management, Employee Productivity.

1. Introduction

The present rapidly creating business scene, affiliations are persistently searching for approaches to obtaining an advantage. One basic figure accomplishing this is a devoted and useful workforce. However, traditional Human Resource Management (HRM) practices

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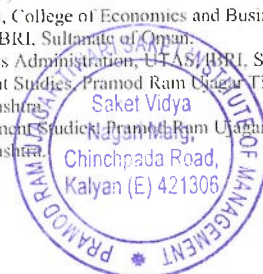
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Key functions of HRM include

These capabilities incorporate enrollment and determination, where HRM is liable for recognizing and recruiting the right ability. Training and development initiatives fall under HRM's purview, ensuring employees acquire and enhance the skills necessary for their roles. HRM manages performance appraisal systems, fostering employee growth and aligning individual goals with organizational objectives. Compensation and benefits administration, vital for retaining and motivating employees, is another primary function. Additionally, HRM plays a pivotal role in maintaining a positive work environment through employee relations and addressing concerns. Lastly, HRM contributes to strategic planning by aligning human capital with organizational goals, ensuring a cohesive and productive workforce. These interconnected functions collectively contribute to effective talent management and organizational success.

1. **Recruitment and selection:** Distinguishing and drawing in qualified contender for open positions, and afterward choosing the best fit in light of abilities, experience, and social arrangement.
2. **Training and development:** Giving laborers the data and capacities they need to play out their positions effectively and cultivate their employments.
3. **Performance management:** Setting clear assumptions, giving continuous criticism, and estimating worker performance against those assumptions.
4. **Compensation and benefits:** Planning and overseeing serious compensation and arrangement for assistance that draw in and hold top ability.
5. **Employee relations:** Keeping up with positive associations with representatives by tending to their interests and settling clashes.
6. **Human resource planning:** Separating future labor force needs and making methods to ensure the affiliation has the best people in the ideal positions at the best time.
7. **Workplace safety and health:** Making and keeping a protected and solid work climate for all representatives.
8. **Compliance:** Guaranteeing the association follows all significant business regulations and guidelines.

1.2. Research objectives

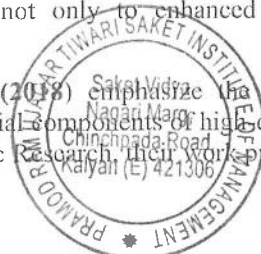
The core research objectives of the research are as follows:

- To Assess Employee Dedication Levels
- To Identify Correlation between HRM Practices and Dedication
- To Examine Factors Influencing Productivity

2. Literature Review

De Vos (2021) conducted a meta-analysis to explore the impact of flexible work arrangements on both employee well-being and productivity. Their study, featured in the *Journal of Applied Psychology*, reveals significant positive effects, indicating that flexible work arrangements contribute not only to enhanced well-being but also increased productivity among employees.

Adom, Hussein, and Agyem (2018) emphasize the crucial role of theoretical and conceptual frameworks as essential components of high-quality research. Published in the *International Journal of Scientific Research*, their work provides guidance on constructing



- 2) Thorough interviews are carried out prior to the ultimate decision being made.
- 3) A new hire is typically given an orientation training to acquaint him with the organization and his role;
- 4) There are enough training and development possibilities offered by this organization;
- 5) I have profited from a few hours of training this year.
- 6) This organization bases performance reviews on results, with a developmental emphasis.

The five items used to measure the second variable, "Commitment HRM Practices," are as follows:

- 1) We frequently receive updates about business-related matters;
- 2) I am consulted by my boss when decisions are made that affect my work;
- 3) Every department in this organization has briefing teams that talk about matters connected to work;
- 4) I think the pay scale for this company is reasonable.
- 5) I want to continue working for this company.

Eight inquiries are utilized to gauge the third factor, "development driven HRM Practices," which is:

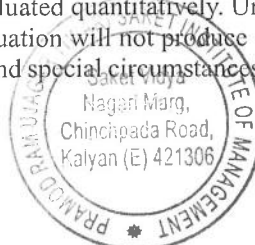
- 1) There are frequent changes happening in this organization that have an impact on how I should perform my work;
- 2) The management does inform us of any changes that impact the way we should carry out our duties;
- 3) The management consistently conveys to us the importance of upholding the company's core values;
- 4) This organization has a career development policy;
- 5) The organizational structure of this company is subject to frequent changes in the reporting relationships;
- 6) My supervisor provides me with resources and guidance to enable me to carry out my duties.

The fourth factor "hierarchical advancement" is estimated utilizing 8 things which are:

- 1) This organization frequently presents new items;
- 2) This organization frequently acquaints new innovation with streamline tasks.
- 3) This organization has an examination division that examines new business thoughts to emerge with new items or administrations.
- 4) There is a learning and development unit within this affiliation.
- 5) This affiliation's managers genuinely believe that we should offer crucial ideas for process enhancement;
- 6) This affiliation's primary goal is to improve assistance transportation;
- 7) The board's affiliation business strategy depends on quality association;
- 8) Workers receive compensation for considering ideas that result in favourable outcomes.

4. Data Analysis and Results

After being compiled and organised into a Succeed sheet, the study's data is added to the Verifiable Pack for Social Sciences. The information should be ready prior to appraisal. Information planning, according to Rovai, is a process of organising data in a way that makes it possible for data to be evaluated quantitatively. Until the material being dissected is of high quality, information evaluation will not produce any significant results. In order to identify missing characteristics and special circumstances, the SPSS missing information



the degree should fall between 0.85 and 0.90 as the cut-off values. The square supports of the AVEs should be easier to observe than the associations of the structures, according to the Fornell-Larcker standard choice rule. As a result, Table 2 below gives the impression that this study's surveying the assessment model had excellent mixed and discriminant validity.

Table 2: Differentiating and combined legitimacy

Constructs	HCHRMP	HPWS	IHRMP	OI
HCHRMP	0.861	-	-	-
HPWS	0.761	0.551	-	-
IHRMP	0.533	0.36	0.85	0.946
OI	0.963	0.745	0.315	-

Immediately after verifying that the assessment model is ordinarily distributed, the creators proceed to examine the hidden model of this synopsis. The model fits the data well, according to the Anova test in particular ($F(2, 144) = \{30,015; p<.000\}$). Furthermore, the R square shows that the combined effect of the three HRM practice stores accounts for enormous variations in various evened-out progress. Thirdly, the hypothesis that HRM practices driven by improvement actually have an impact on various balanced movements is maintained.

Table 3: Way Coefficient's aftereffect

PATH	ORIGINAL SAMPLE (O)	SAMPLE MEAN (M)	STANDARD DEVIATION (STDEV)	T STATISTICS (O/STDEV)	P VALUES
HCHRMP → OI	0.271	0.545	0.226	3.965	0.114
HPWS → OI	0.124	0.195	0.223	0.369	0.326
IHRMP → OI	0.332	0.114	0.174	2.836	0.124

Fourthly, the speculation that a prevalent exhibition work structure eagerly influences different evened out progress is pardoned Fifthly, the theory that commitment HRM rehearses decidedly influences genuine movement is comparatively kept up with.

5. Conclusion

The execution of creative human asset the board rehearses assumes a urgent part in encouraging a working environment climate portrayed by representative commitment and elevated efficiency. By taking on forward-thinking systems that go past traditional methodologies, associations can develop a workforce that isn't simply connected yet in addition enabled to contribute definitively to the hierarchical objectives. The accentuation on creative HRM rehearses, as investigated in this review, highlights their importance in molding a dynamic and responsive working environment culture. As associations explore the intricacies of the contemporary business scene, the combination of such practices becomes basic for supporting representative devotion and improving by and large efficiency, thereby situating the association for long haul outcome in a steadily developing proficient scene.

References

1. Adom, D., & Hussein, E. K. (2018). A Lagym, Joc, "Theoretical and Conceptual Framework: Mandatory Ingredients Engineering, Int. J. Sci. Res, 7(1), 438-441.



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Effects Of Asset Liability Management On The Profitability And Liquidity Of Particular Indian Commercial Banks

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ARTICLE INFO

ABSTRACT

This quantitative study focuses on Bank of India, Andhra Bank, Axis Bank, and HDFC Bank while analyzing the asset-liability management, profitability, and liquidity of a few chosen Indian commercial banks. Information on capital, reserves, deposits, borrowings, assets, liabilities, profitability ratios, liquidity ratios, and compound growth rates were gathered from their annual reports and financial statements. For analysis, statistical tools such as inferential and descriptive methods were used. The findings demonstrate that different banks have different approaches, with Bank of India and HDFC Bank seeing strong increases in capital, reserves, deposits, and borrowings. Andhra Bank is notable for its robust reserves of liquidity, although HDFC Bank exhibits more profitability. The report emphasizes how crucial efficient asset-liability management is to Indian commercial banking's capacity to maintain profitability and reduce risks.

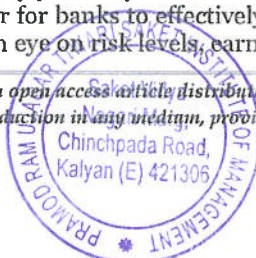
Keywords: Asset-liability management, profitability, liquidity, commercial banks, India.

1. INTRODUCTION

A wide range of organizations, markets, and financial instruments make up the financial system. It offers the main mechanism for converting savings into profitable investments. A contemporary economy must have an effective financial system since it plays a major role in the distribution of resources. A financial institution's primary goal is to mobilize resources and direct them toward investors. In various economic systems, financial institutions have a varied channeling function. Somashekar (2019) asserts that commercial banks have a leading role in economic growth in addition to being thought of as money exchangers. They serve as the nation's financial safe havens as well as the repositories of resources required for growth in the economy. They contribute significantly to a nation's economic growth. According to conventional wisdom, commercial banks are among the financial intermediaries that raise capital mainly through the issuance of time/fixed, savings, and checkable/demand deposits. Commercial banks are also permitted to offer every banking service in the financial market because our nation's financial system is still in its infancy. Commercial banks handle practically all of the money and capital market transactions and operations since there isn't a well-organized financial market. According to Roy (2010), commercial banks are significant for the nation's financial stability as well as economic prosperity. Banks are especially significant in emerging economies for three main reasons. Initially, they play a crucial part in the growth of additional financial markets and intermediaries. Second, the business sector and investors significantly rely on banks to satisfy their funding needs since there are weak bond and stock markets. Finally, due to their general inability to control financial risks, banks serve the interests of a large number of family savers in emerging or undeveloped nations who want to ensure income, liquidity, and fund safety.

An organization's not entirely set in stone by how much cash it makes contrasted with the capital it contributes. The amount of detailed income for a given monetary year may be utilized to financially measure this level of progress. According to Zopounidis (2001), in order for banks to effectively compete in the market, they must manage their assets and liabilities while keeping an eye on risk levels, earnings, liquidity, profit, solvency, and

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the volume of deposits and loans. By doing this, they can reduce losses and increase profitability. Given the pivotal role asset liability management plays in risk management, banks must acknowledge the significance of asset liability and implement efficient risk management protocols. By employing sophisticated asset liability management strategies, banks can optimize profitability and mitigate risk in the fiercely competitive banking services markets of today. A company may balance its assets and liabilities with the help of asset liability management. Consequently, this reduces monetary hazards and enhances profitability. When a company is making investment decisions, asset liability management helps.

1.1. Research Objectives

1. To assess asset-liability management methods in Indian commercial banks, analyze growth rates of capital, reserves, deposits, and borrowings.
2. To examine how liquidity, profitability, and asset composition affect financial performance and risk management in these institutions.

2. LITERATURE REVIEW

Rahmi and Sumirat (2021) utilized liquidity risk, functional proficiency, capital sufficiency, and financing cost risk as free factors and ROA as a relapse and variable to concentrate on asset-liability the board during the Coronavirus pestilence and its impact on banks' profitability in Indonesia. The review's decision clarified that compelling AL the executives ensures the financial business would be more profitable all through the pandemic. In rundown, when assets and liabilities are effectively followed and made due, the bank's profit will rise.

Owusu and Alhassan (2021) utilized the SCA model to dissect the ALM of Ghana's financial industry and observed that how ALM is overseen affects business banks' profits. The outcomes confirmed that the whole execution of banks is straightforwardly affected by the fitting administration of Asset-Liability.

The effect of asset-liability the executives on the profitability of Nigerian store cash banks is examined by **Onaolapo and Adegoke (2020)**. The asset-liability pointers for estimation were credit and advance, NPL, credits and advances, borrowings, and request store, while ROA and return on initial capital investment filled in as intermediary appraisals for monetary execution. The review's decisions show that the presentation of Nigeria's store cash organizations is exceptionally influenced by asset-liability the board.

Likewise, **Ukpong and Olowokudejo (2021)** directed an AML examination on ten Nigerian protection firms utilizing the SCA model. As a substitute for profitability, ROA was utilized. That's what the investigation discovered, except for property and hardware, asset the executives essentially adds to enhancements in the profitability of disaster protection firms. Expressed in an unexpected way, further developed asset-liability the board will yield a bigger return.

Utilizing CAMEL proportions, **Mun and Thaker (2016)** directed an observational investigation of Malaysia's banks, both Islamic and Ordinary, to inspect the effect of asset-liability the executives on the Profit from Value proportion, a proportion of profitability, for the monetary years 2010 to 2013. Their review's discoveries showed that asset-liability the board, which applies to both ordinary and Islamic banks, essentially influences the profitability of the last option. The monetary presentation of the Afghan financial framework was concentrated by **Haidary and Monastery (2018)**.

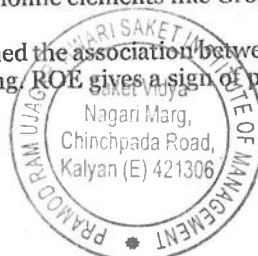
The impacts of both interior and outside factors were analyzed in the examinations. The discoveries showed serious areas of strength for a connection between's inside bank qualities and bank profitability. Along these lines, the strength and sort of the connection among assets and liabilities in Tunisia were likewise discovered utilizing the Standard Relationship Examination apparatus.

As indicated by **Said and Edge's (2018)** study, the monetary record's parts were effectively taken care of by Tunisian banks, and the profitability of the sheet was dependent upon the nature of asset the executives.

By the by, **Shrestha (2015)** utilized POLS to research the profitability of Nepal's financial industry. ROA filled in as the profitability pointer, while Different Assets, expansion, ostensible Gross domestic product, and Assets that get through longer than a year filled in as the AML markers. As per the report, there is a measurably significant connection among's AML and banking profitability. Significant commitments came from stores on the liability side and credits and advances on the asset side.

To determine the sort and power of the connection among commitments and assets, **Said and Edge (2018)** used the Accepted Relationship Examination instrument. As indicated by the review's discoveries, the asset-liability things were effectively overseen by Tunisian banks, and their prosperity was generally subject to how well the assets were dealt with. The impacts of macroeconomic variables, bank-explicit elements, and industry-explicit elements on the monetary execution of a UK bank were undeniably inspected by **Saeed (2014)**. His examination's discoveries show that stores, advances, capital, and bank size all emphatically influence the profitability of not entirely settled by ROE and ROA. In his review, he proceeded to say that banks might turn out to be more profitable by acquiring an upper hand and wellbeing net, which comes from having a lot of capital, stores, credits, value, and macroeconomic elements like Gross domestic product and expansion.

Menicucci and Paolucci (2016) researched the association between inside bank attributes and the financial business' profitability in the European setting. ROE gives a sign of profitability. The review's decision exhibits



that bank size and capital proportion well affect banks' monetary presentation. In his exploration, **Masindi (2021)** found a relationship between's the expansion rate and bank profitability. Proof from Afghanistan's Financial Area 38 demonstrates that asset-liability the executives altogether affects bank profitability, as shown by return on value (ROE).

As per **Baariu and Peter (2021)**, the financial area's good yet irrelevant monetary exhibition is affected by the pace of expansion. There is other proof to help the positive relationship between's bank profitability and expansion rate. In his exploration led in an African setting, **Masindi (2021)** tracked down a positive and genuinely critical relationship between's genuine Gross domestic product and the proportion of return on value.

Rashid (2022) led an exact review to look at the development and solidness of customary and Islamic banks in Pakistan using GMM. The review's decision showed that macroeconomic factors and bank endogenous factors inconveniently affected the development, profitability, and dependability of the two sorts of banks. Yet, the way this sort of risk influences monetary associations changes; though risks emerging from credit and premium were higher for regular banks, risks emerging from liquidity, activity, capital, expansion, and money were higher for Islamic banks.

3. RESEARCH METHODOLOGY

3.1. Research Design:

In order to examine the profitability, liquidity, and asset-liability management of particular Indian commercial banks, this study uses a quantitative research approach. It entails gathering numerical data from financial documents and analyzing the links between various factors using statistical methods.

3.2. Data Collection:

The annual reports and financial statements of the chosen commercial banks—Bank of India, Andhra Bank, Axis Bank, and HDFC Bank—will serve as the source of data for this study. We will specifically extract and analyze data on capital, reserves, deposits, borrowings, assets, liabilities, profitability ratios, liquidity ratios, and compound growth rates.

3.3. Statistical Tools:

Various factual apparatuses will be utilized to investigate the information that has been accumulated. The information will be summed up utilizing graphic measurements, which incorporate rates, means, medians, and standard deviations. Additionally, associations, trends, and noteworthy variations between variables can be found using inferential statistical techniques including regression analysis, correlation analysis, and ANOVA.

3.4. Ethical Consideration:

Throughout the study procedure, ethical concerns will be strictly followed. The information gathered from the commercial banks' financial statements will only be utilized for scholarly study, and it will be treated with integrity and secrecy. To maintain academic integrity and openness, the data sources will be properly cited and acknowledged. Furthermore, all possible conflicts of interest will be declared, and the study will be carried out in compliance with legal and ethical requirements.

4. DATA ANALYSIS

Table 1: Compound Growth Rates of Assets and Liabilities of Components in Selected Commercial Banks

Items	Compound Growth Rates			
	Bank of India	Andhra Bank	Axis Bank	HDFC Bank
Capital and Liabilities				
Capital	5.31	3.56	5.38	4.68
Reserve and surplus	24.98	14.51	33.60	28.06
Deposits	46.02	15.38	19.74	22.84
Borrowings	22.73	29.57	33.92	33.75
Other liabilities and provisions	3.91	8.35	9.88	10.46
Quick Ratio	20.10	36.30	3.07	1.63
Assets				
Cash and balances with RBI	84.57	11.45	17.06	19.14
Balances with Banks and Money at Call & short notice	20.43	-16.25	17.05	8.45
Investments	12.96	14.22	16.26	18.36
Loans and Advances	15.47	16.69	24.79	32.51
Fixed assets	26.85	21.75	18.05	32.97
Other assets	22.92	15.84	30.92	41.74
ROA (%)	0.49	1.40	1.85	2.13



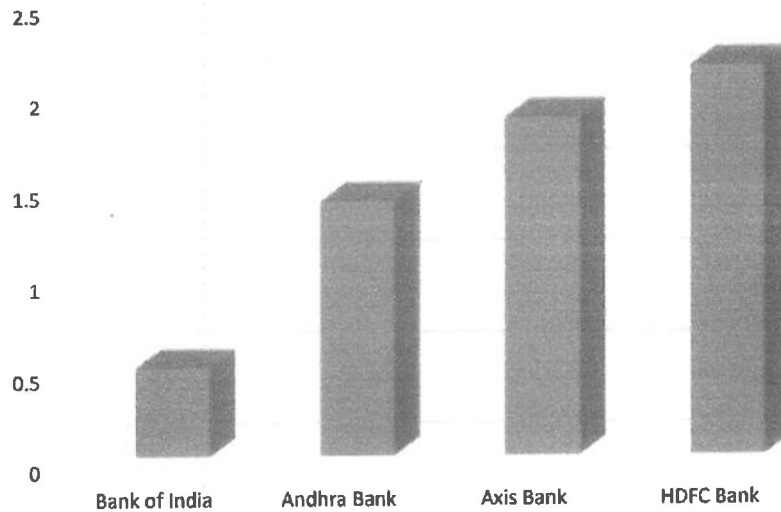


Figure 1: Quick Ratio of Selected Commercial Banks

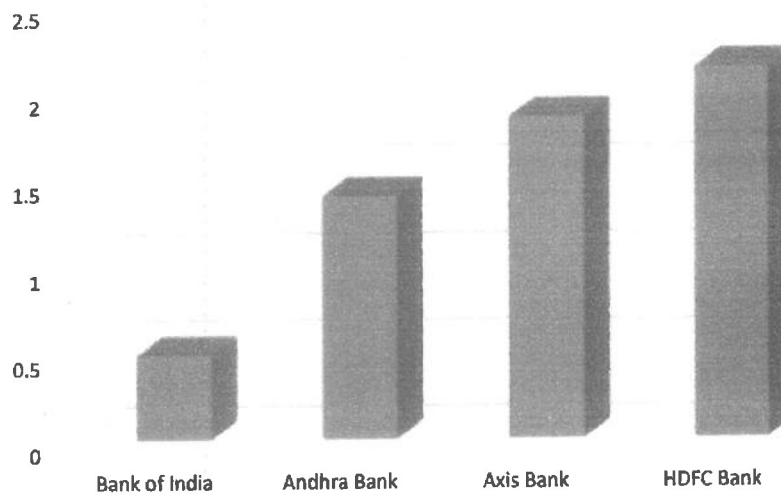


Figure 2: ROA (%) of Selected Commercial Banks

The compound growth rates of assets and liabilities for a subset of Indian commercial banks are displayed in Table 1, which also includes profitability and liquidity metrics related to asset liability management (ALM). Particularly, Bank of India and HDFC Bank have greater rates of capital, reserve, deposit, and borrowing growth; these might be signs of strong financial health and room to develop. With an exceptionally high fast ratio that indicates substantial liquidity buffers relative to its obligations, Andhra Bank stands out. Regarding assets, the majority of banks have significant growth in cash and balances with the RBI, showing an emphasis on preserving liquidity buffers. Of the listed banks, HDFC Bank exhibits the greatest Return on Assets (ROA), a sign of better profitability.

5. CONCLUSION

This study concludes with a variety of approaches and results. Considerable variations in capital, reserve, deposit, and borrowing growth rates are indicative of different asset and liability management strategies. Additionally, the analysis of profitability, liquidity, and asset composition reveals the vital interactions among these variables that impact the banks' overall financial health and risk management plans. These results highlight how crucial efficient asset-liability management is to maintaining profitability and reducing risks in the ever-changing Indian commercial banking industry.



REFERENCES

1. Ahmad, A.G. (2016). Measurement of technical efficiency in Afghanistan banks: A Data Envelopment Analysis approach. PhD diss., Ritsumeikan Asia Pacific University.
2. Baariu, M. J., & Peter, N. (2021). Relationship between selected macroeconomic variables and the financial performance of investment banks in Kenya. *International Journal of Economics and Finance*, 13(11), 1-98.
3. Eko, E. U., Adebisi, A. W., & Moses, E. J. (2020). Evaluation of forensic accounting techniques in fraud prevention/detection in the banking sector in Nigeria. *International Journal of Finance and Accounting*, 9(3), 56-66.
4. Haidary, Q., & Abbey, B. (2018). Financial performance of commercial banks in Afghanistan. *International Journal of Economics and Financial Issues*, 8(1), 242
5. Masindi, N., & Singh, P. (2021). The analysis of variables influencing bank profitability in Africa: Evidence from selected African countries. *International Journal of Innovation, Creativity and Change*, 15(11), 213-230.
6. Menicucci, E., & Paolucci, G. (2016). The determinants of bank profitability: Empirical evidence from the European banking sector. *Journal of Financial Reporting and Accounting*
7. Mun, Y. L., & Thaker, H. M. T. (2016). Asset liability management of conventional and Islamic banks in Malaysia. *Al-Iqtishad: Jurnal Ilmu Ekonomi Syariah*, 9(1), 33-52.
8. Onaolapo, A. A. R., & Adegoke, K. A. (2020). Asset liability management and performance of listed deposit money banks in Nigeria. *Asian Journal of Economics, Finance and Management*, 40-58
9. Owusu, F. B., & Alhassan, A. L. (2021). Asset-liability management and bank profitability: Statistical cost accounting analysis from an emerging market. *International Journal of Finance & Economics*, 26(1), 1488-1502.
10. Qazizada, Y., & Wani, N. U. H. (2020). Terrorism as a Challenge to Good Governance in Afghanistan: An Evaluation. *Kardan Journal of Social Sciences and Humanities*, 3(2), 1-13.
11. Rahmi, Y., & Sumirat, E. (2021). A study of the impact of alma on profitability during the covid-19 pandemic. *International Journal of Business, Economics, and Law*, 24, 54-65
12. Rashid, A. (2022). Impacts of bank-specific and macroeconomic risks on growth and stability of Islamic and conventional banks: An empirical analysis from Pakistan. *The Journal of Asian Finance, Economics and Business*, 9(2), 1-14.
13. Shrestha, S. (2015). Asset liability management and commercial banks' profitability in Nepal. *Academic Voices: A Multidisciplinary Journal*, 5, 40-47.
14. Tee, E. (2017). Asset liability management and the profitability of listed banks in Ghana. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 8(3), 09-14.
15. Ukpong, M., & Olowokudejo, F. (2021). Asset liability management and the profitability of the life insurance industry in Nigeria. *The Journal of Risk Management and Insurance*, 25(2), 11-35



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**THE CHALLENGES & IMPACT OF STARTUP, INNOVATION
AND ENTREPRENEURSHIP IN SUSTAINABLE ECONOMIC GROWTH
FOR INDIA**

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Abstract

Innovation is much of the time considered one of the principal powers behind any country's long haul, stable economic success. In this period of present-day globalization, the Indian economy is among those with the fastest growth rates. Since the most recent twenty years, the Indian economy has become by a normal of 7%, however is this growth feasible or simply brief? peculiarity welcomed on by a growing purchaser market and an extending data industry. Innovation is critical to accomplishing long haul practical growth. This paper tries to comprehend how innovation adds to India's economic turn of events. India, the second-most populated country on the planet with a more modest topographical region, should keep up with its Gross domestic product growth rate else it can't be said that feasible improvement is its



backbone. To fathom the causes and main thrusts behind the inorganic extension of startups in India, this article endeavors to lead an exhaustive examination of the turn of events and future possibilities of startup frameworks in India. All the more critically, this piece will help feature the huge commitments that business visionaries have made to creating economies like India.

Keywords: Startup, Innovation, Entrepreneurship, Economic, Growth

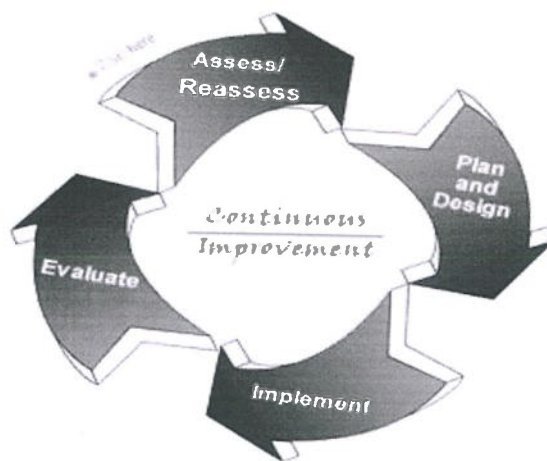
1. INTRODUCTION

The Public authority of India's lead program, Startup India, expects to make serious areas of strength for a that is steady of the improvement of new firms, to advance feasible economic growth, and to make critical business prospects. Through this program, the public authority needs to empower organizations to foster through innovation and plan. Since the drive's introduction on January 16, 2016, various drives have been sent off to help the vision of the Hon'ble Top state leader, Shri Narendra Modi, of making India a country of occupation makers instead of occupation searchers. With organizations being recognized through the Startup India drive and numerous business visionaries exploiting the benefits of starting their own firm in India, these projects have prodded the startup culture.



Figure 1: Innovation Area

The 19-Point Startup India Activity Plan incorporates, in addition to other things, a corpus asset of



INR 10,000 crore, numerous brooding habitats, more straightforward patent recording, charge

Figure 2: Process Design

exclusions, simpler business arrangement, and a faster leave system.

It is essential that the Middle and States/UTs cooperate in show to appropriately sustain and uphold new companies for their improvement to understand the point of making a strong biological system in India. To achieve this objective, a rundown of suggestions has been made for the State/UT Government to follow up on and execute. The zenith of current industrialization has been entrepreneurship, innovation, and inventiveness. Since people are rapidly embracing the possibility of entrepreneurship and innovation, world economies are seeing a critical increase. Consequently, the public authority is under less strain to invigorate the economy and make occupations. The three essential attributes of the business person were the subject of financial specialist Joseph Schumpeter's 1949 hypothesis of entrepreneurship. These incorporate imagination, innovation, and foreknowledge. A pivotal part of entrepreneurship studies is fostering a superior comprehension of the components that add to startup disappointment. Rather than new business disappointments, the startup writing has given excessively more consideration to examples of overcoming adversity and elements (Deakins, 1996). As per the Pearl (2017) report, which analyzed 62 economies all through the globe, over 67% (67%) of the grown-up populace accepts that business visionaries are very much regarded and have a high standing in

their nations. This rate advances youngsters' energy for entrepreneurship, which is really great for their economies' future.

2. REVIEW OF LITREATURE

Sahay and Mohan (2018) provide a thorough analysis of the development of entrepreneurship, innovation, and economic progress in India throughout history. The study looks at the numerous elements that have contributed to the rise of entrepreneurship in India and looks at the function of innovation in promoting economic progress. The authors talk about the difficulties faced by Indian entrepreneurs and offer insights into the kinds of policies and tactics that can promote innovation and entrepreneurship-based sustainable economic growth.

The entrepreneurship and innovation ecosystem in India is examined by Kapoor, Agrawal, and Ramaswamy (2019), with an emphasis on the difficulties faced by entrepreneurs and possible solutions. The study looks at important elements that influence startup growth in India, including infrastructure, human capital, regulatory environment, and access to financing. The authors emphasize the need for encouraging policies, institutional backing, and industry-academia cooperation to create a strong ecosystem for entrepreneurship and innovation that can support long-term economic growth.

With a particular emphasis on the "Startup India" initiative, Banerjee, Gupta, and Sengupta (2020) assess the prospects and obstacles for the development of entrepreneurship in India. The report reviews and assesses the governmental initiatives put out to support startups in India. To promote sustainable entrepreneurship and spur economic growth, the authors stress the significance of resolving issues with access to capital, infrastructure, regulatory environment, and skill development.

By examining the Indian startup ecosystem, Reddy and Rao (2020) investigate the function of startups in sustainable economic development. The article explores the factors influencing startups' success and provides an outline of their growth and effect in India. The authors explore the difficulties faced by startups and emphasize the value of encouraging regulations, easy access to capital, mentorship, and innovation-driven entrepreneurship for long-term economic growth.



They stress the importance of stakeholder cooperation in fostering an environment that is supportive of startups in India.

Specifically concentrating on Indian startups, Sankar (2021) studies sustainable entrepreneurship and its effects on economic growth. The notion of sustainable entrepreneurship is examined in this research, along with its applicability in the Indian setting. The author looks into the methods and tactics used by Indian entrepreneurs to achieve long-term success and considers the financial ramifications. The study sheds light on how sustainable entrepreneurship contributes to economic growth and emphasizes the significance of social and environmental responsibility in business operations.

In order to promote economic progress, Paul and Ram (2021) talk about the problems and solutions related to sustainable entrepreneurship in India. The chapter gives a broad overview of India's entrepreneurial scene and looks at the problems that entrepreneurs face in terms of the economy, society, and the environment. The writers investigate tactics and regulations that can encourage sustainable entrepreneurship and advance the economy. The chapter also addresses the possibility for inclusive and equitable growth through entrepreneurial endeavors and emphasizes the importance of innovation and technology in encouraging sustainable entrepreneurship.

3. DATABASE AND METHODOLOGY

In this paper, the effect of innovation on India's economic advancement is analyzed. This study covers a time of 15 years, from 1996 to 2011. The 1990s act as the investigation's ordered setting. Since this year points the rise of the purported "New Economy" according to an economic viewpoint. The extraordinary utilization of data innovation and innovation overall is what DeLong and Summers (2001) distinguish as the "substance of the New Economy."⁶ The "New Economy" is likewise characterized by the Canadian government (2002) as "an Economy that is delivering or seriously utilizing creative or new technologies."⁶ From this idea, it is clear the way in which significant innovation is to a country's economic turn of events.

Because of an absence of assets, it was hard to track down the information preceding the chose time span. This exploration paper's principal source is the World Bank Information Bank. Because of a scarcity of information, a few factors from this study must be wiped out, including



capital gathering, framework endlessly spending on specialized headway. The Gross domestic product growth rate and per capita Gross domestic product growth rate are the two principal factors utilized in this review to measure India's turn of events. The factors to measure India's work and the effect of that work on economic growth in India are the quantity of patent applications presented, the level of Gross domestic product spent on Research and development, and the level of GNI spent on training. This study looks at the extension of innovation in India utilizing the quantity of patent applications submitted as a variable.

To decide if there is multi-collinearity among the factors, the multi-collinearity test has been run. Table 1 shows the connection framework for the model factors.

Table 1: Correlation Matrix

Items	GDP Growth	R&D Exp	Education	FDI	Unemployment	GDP Per capita Growth	Patient Application
GDP growth	1						
R&D Exp	0.26512	1					
Education	0.35412	0.145121	1				
FDI	0.41251	0.36412	0.64251	1			
Unemployment	0.36412	0.41251	0.56121	0.25413	1		
GDP Per capita Growth	0.21451	0.36512	0.397411	0.45121	0.36541	1	
Patient Application	0.25445	0.14511	0.64512	0.36514	0.26974	0.33612	1



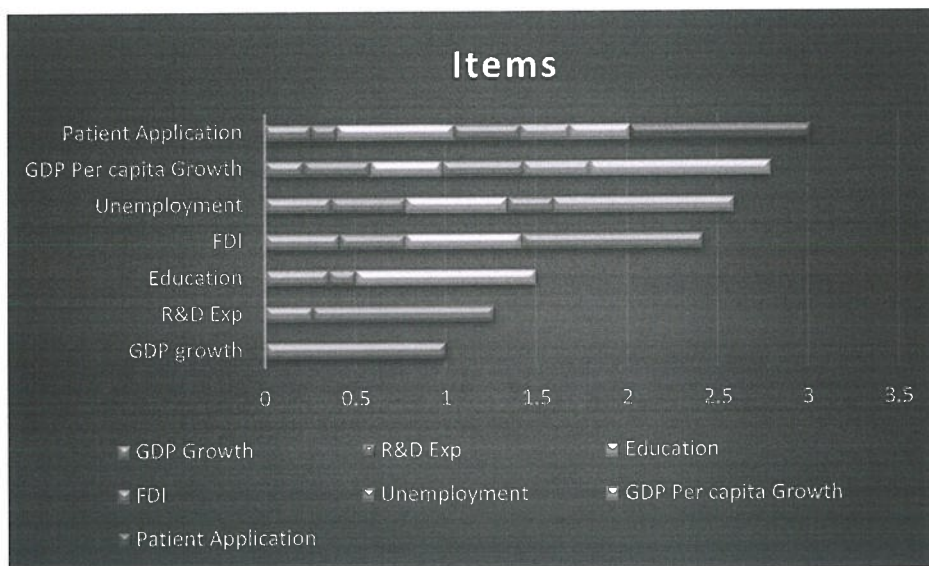


Figure 3: Correlation Matrix

The multicollinearity between two free factors is inspected through the connection network. No multicollinearity between any two free factors is made sense of by this network. This lattice exhibits the high certain connection between the quantity of patent applications, an intermediary mark of innovation in India, and Gross domestic product per capita, an intermediary proportion of India's economic turn of events. As per this information, according to capita economic growth rises, individuals become more creative. Also, I found the assumed high sure connection between Research and development use and patent applications. It suggests that as India's economy develops, assets ought to be dispensed all the more vigorously into innovative work. Moreover, I find a high certain relationship among FDI and Research and development burning through (.78). This suggests that as Research and development use rises, India draws more prominent unfamiliar direct speculation. True to form, there is a negative connection among joblessness and growth in the Gross domestic product, Gross domestic product per capita, Research and development use, patent applications, and FDI. Out of the blue, this framework exhibits a negative affiliation (- .33) between Gross domestic product growth rate and schooling venture, which features the requirement for extra exploration around here.

4. RESULTS

The model depicted in the information and method area has been used to test the review's speculations. The discoveries of a multi-direct relapse model in which the Gross domestic product growth rate is the reliant variable and any remaining elements are free are displayed in Table 2.

Table 2: Summary Output

Regression Statistics	Frequency
Multiple R	0.6481211
R Square	0.7845115
Adjusted R square	0.8451211
Standard Error	0.669712
Observation	0.751421

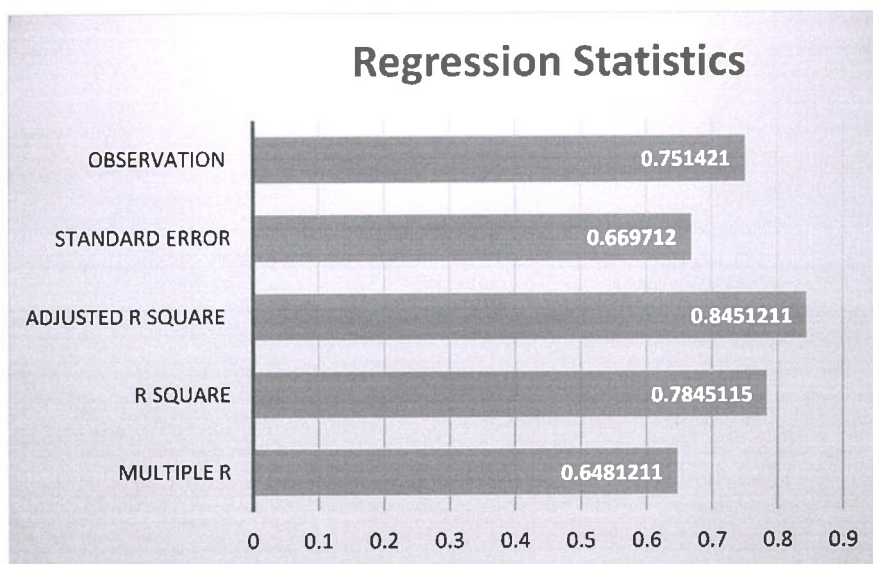


Figure 4: Summary Output



Table 3: ANOVA

Items	df	SS	MS	F	Significance F
Regression	8	81.64451	14.51361	8021.1541	6.2314513
Residual	9	0.254121	0.051441		

Table 4: coefficient

Items	Coefficient	Standard Error	T start	P-value
Intercept	3.584121	0.2145131	9.145141	6.2445110
R & D Exp	-2.65414	0.6412141	-7.202142	0.0251453
FDI	-0.36421	0.364141	-1.814513	0.1562412
Patent Application	-0.65414	0.253652	1.301254	0.2514553
Unemployment	-0.254114	0.214546	-3.21414	0.3256412
GDP Per Capita Growth	0.632141	0.361415	6.045150	0.5144125

The different liner models talked about above give the general integrity of-fit measurements. On the off chance that not entirely set in stone to be sufficient in the wake of fulfilling suspicions, it tends to be utilized with certainty. Relapse insights are utilized to assess the models' reasonableness. Numerous R and R square are utilized to communicate various connection and assurance coefficients, individually. The Gross domestic product growth rate is the reliant variable, and the other free factors used in the examination are unequivocally emphatically connected, as per the R (.99). A lower P esteem demonstrates that the model is more huge. Nonetheless, it's startling to see negative connections between's Research and development consumption, training, FDI, and patent applications. That shows that as the speed of economic growth of the Indian economy builds, so will the sum spent on Research and development, schooling, FDI, and the quantity of patent applications recorded in India. That appears to be



unrealistic. The four elements referenced above ought to be all certain. This model has my acknowledgment on the grounds that a lower P esteem shows that it is critical. Yet, this paper raises a ton of inquiries.

5. CONCLUSION

Apportioning cash for innovative work and training can add to India's drawn out manageable economic growth. Innovation is a basic part of a country's economic achievement. India might turn into a pioneer instead of a devotee country through cultivating innovation. To achieve this objective, more cash ought to be spent on Research and development and training, which will help India's efficiency over the long haul. The result of this study paper model, nonetheless, is unforeseen. India's growth isn't filled by innovation, similar to the case for the majority industrialized countries, as per the outcome. As per the discoveries, as India's economy creates, Research and development uses, instructive consumptions, unfamiliar direct speculation, and the quantity of patent applications recorded in India would all downfall. That makes one wonder of whether current economic improvement will be maintained or just a passing craze. Any new thought needs the right help and direction to prevail as a business undertaking. Startups are at present extending like a grapevine. Indian startups try to establish a beginning up climate with huge ability, training, and imagination as well as hatcheries and correspondence with monetary associations.

REFERENCES

1. *Sahay, A., & Mohan, R. (2018). Entrepreneurship, Innovation, and Economic Growth in India: Historical Evolution and Future Prospects. Global Business Review, 19(6), 1403-1418.*
2. *Kapoor, S., Agrawal, A., & Ramaswamy, V. (2019). Entrepreneurship and Innovation Ecosystem in India: Challenges and the Way Forward. Journal of Innovation and Entrepreneurship, 8(1), 1-14.*



3. Banerjee, S. B., Gupta, V., & Sengupta, R. (2020). *Startup India: Opportunities and Challenges for Entrepreneurship Development in India*. *South Asian Journal of Business and Management Cases*, 9(1), 96-103.
4. Reddy, A. S., & Rao, G. V. (2020). *Role of Startups in Sustainable Economic Development: An Analysis of Indian Startup Ecosystem*. *Journal of Management Research*, 20(4), 266-285.
5. Sankar, R. (2021). *Sustainable Entrepreneurship and Economic Growth: A Study on Indian Startups*. *Journal of Developmental Entrepreneurship*, 26(2), 1-22.
6. Paul, J., & Ram, M. (2021). *Sustainable Entrepreneurship in India: Challenges and Strategies for Economic Growth*. In *Innovation and Sustainable Entrepreneurship* (pp. 181-197). Springer.
7. Bharadwaj, A., & Menon, N. (2019). *Sustainable entrepreneurship and its implications for India*. *Journal of Innovation and Entrepreneurship*, 8(1), 1-21.
8. Srinivasan, R. (2020). *Role of innovation and entrepreneurship in sustainable economic growth: Evidence from India*. *Journal of Innovation and Knowledge*, 5(1), 21-28.
9. Gupta, N., Jain, R., & Bhandari, A. (2021). *Exploring the challenges and opportunities for sustainable entrepreneurship in India*. *International Journal of Entrepreneurship and Innovation Management*, 25(1-2), 70-89.
10. Acharya, S. R., & Dash, S. R. (2019). *Entrepreneurship and innovation for sustainable development: A study on the Indian perspective*. *International Journal of Entrepreneurship and Small Business*, 37(1), 36-56.
11. Singh, P., & Hasan, M. N. (2021). *Startups and sustainable economic growth in India: Role, challenges, and policy implications*. *Journal of Entrepreneurship in Emerging Economies*, 13(1), 150-170.
12. Gupta, S., & Seth, A. (2020). *Entrepreneurship, innovation, and sustainable economic growth in India: An empirical investigation*. *Journal of Global Entrepreneurship Research*, 10(1), 1-21.
13. Verma, N., & Mathur, M. (2021). *Impact of startup ecosystem on sustainable economic growth: Evidence from India*. *Journal of International Entrepreneurship*, 19(3), 477-503.
14. Sengupta, S., & Chatterjee, S. (2019). *Startup India initiative: Opportunities and challenges for sustainable entrepreneurship*. *Journal of Innovation and Entrepreneurship*, 8(1), 1-19.



15. . Bronwyn H. Hall, 2005. *Exploring the Patent Explosion,"The Journal of Technology Transfer, Springer, vol. 30(2_2), pages 35-48, 01*

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