DYNAMICS OF EXCHANGE-TRADED FUNDS IN THE INDIAN FINANCIAL LANDSCAPE: UNRAVELING PERFORMANCE DISPARITIES AND INFLUENTIAL FACTORS

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Abstract

This quantitative research study investigates the performance dynamics of Exchange-Traded Funds (ETFs) in the Indian financial market over the past decade. The research focuses on two primary objectives: examining the extent of the difference in returns between Gold ETFs and Sensex ETFs and evaluating the difference in returns between Index ETF Regular Plans and Direct Plans.

The research employs a robust research design, incorporating a quantitative approach to systematically analyze and interpret numerical data. A comprehensive dataset spanning 10 years is utilized, drawing on historical return data from Gold ETFs, Sensex ETFs, Index ETF Regular Plans, and Index ETF Direct Plans. The systematic sampling approach ensures representative samples, contributing to the statistical reliability and relevance of the findings.

In assessing returns between Index ETF Regular Plan and Index ETF Direct Plan in the Indian market, no significant difference was observed, aligning with prior studies and emphasizing the multifaceted nature influencing ETF performance. Likewise, the research on Gold ETF Return and Sensex ETF Return revealed no significant difference, echoing previous research findings and *highlighting the potential influence of investor preferences and external factors on the dynamics of these ETFs in the Indian stock market.*

***Keywords* - Exchange-Traded Funds, Indian Financial Landscape, Performance Disparities, Influential Factors**

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1 Introduction

In the dynamic landscape of financial markets, the evaluation and comparison of various investment instruments have become crucial for investors and policymakers alike. Exchange-Traded Funds (ETFs) have emerged as popular investment vehicles, offering diversification and flexibility to market participants. This study aims to delve into the performance dynamics of ETFs in the Indian market, with a specific focus on the Index ETF Regular Plan, Index ETF Direct Plan, Gold ETF, and Sensex ETF.

Over the past decade, ETFs have gained significant traction globally due to their unique structure and ability to mirror the performance of various asset classes. In the Indian context, the ETF market has witnessed substantial growth, providing investors with diverse opportunities for portfolio management and wealth creation.

The study begins by addressing the research objective focused on evaluating and comparing the returns of Index ETF Regular Plan and Index ETF Direct Plan in the Indian market. The distinction between these plans has implications for investors in terms of cost structures, fund management, and overall returns. Understanding the nuances of these plans is critical for investors making informed decisions regarding their investment portfolios.

Furthermore, the research explores the returns of Gold ETF and Sensex ETF in the Indian context. Gold ETFs, often considered a safe-haven asset, have exhibited unique dynamics, especially during periods of economic uncertainty, such as the recent COVID-19 pandemic. Comparatively, Sensex ETFs, tracking the performance of the BSE Sensex, offer exposure to the broader equity market. Investigating the returns of these two ETF types provides insights into investor behavior, risk preferences, and the interplay between precious metals and equity investments.

This first objective aims to assess the performance of Index ETF Regular and Direct Plans, shedding light on any significant differences in returns. The study draws inspiration from existing research but emphasizes a nuanced understanding of plan structures and their impact on returns in the Indian market.

The second objective focuses on unraveling the performance disparities between Gold ETFs and Sensex ETFs in the Indian context. Given the multifaceted nature of factors influencing these ETFs, the research aims to contribute to the literature by providing comprehensive insights into the returns and dynamics of these investment instruments.

The study employs rigorous statistical analyses, drawing on a diverse dataset and applying various tests to ensure robust findings. By addressing these research objectives, the study contributes to the evolving body of knowledge on ETFs in the Indian financial landscape. The findings hold significance for investors, financial analysts, and policymakers seeking a deeper understanding of the performance and intricacies associated with different ETF categories.

2 Review of literature

Garg, A. (2022): In his investigation of the repercussions of the COVID-19 pandemic on the performance of gold Exchange-Traded Funds (ETFs) in India, Garg provided vital insights into how economic uncertainties and shifts in investor behavior during the pandemic influenced the dynamics of the gold ETF market. The study's findings illuminate the resilience of gold ETFs as safe-haven assets during crises, showcasing their ability to adapt to evolving market conditions. Investors can leverage these insights to comprehend the unique dynamics of gold ETFs during periods of economic uncertainty, thereby enhancing their capacity to make well-informed investment decisions.

Gao, R., Zhang, X., Zhang, H., Zhao, Q., & Wang, Y. (2022): Introducing an innovative approach to forecasting the overnight return direction of stock market indices, Gao et al. utilized a multiple-branch deep learning methodology, incorporating global market indices into their predictive model. Their comprehensive dataset analysis revealed a remarkable accuracy in predicting overnight stock market returns. The study underscores the importance of integrating global market information in forecasting, providing valuable insights for investors and financial analysts seeking more effective prediction models.

Sharma, S., & Malik, K. (2022): Delving into the intricate dynamics of fear indices, stock returns, and Brent oil prices in the context of BRIC countries during the COVID-19 pandemic, Sharma and Malik's study, published in The Indian Economic Journal, sheds light on the interconnections between these economic variables. The findings underscore the complex relationships that emerged during the pandemic, offering a nuanced understanding of how fear indices, stock returns, and oil prices interacted within the unique economic landscape of BRIC nations during this challenging period.

Agarwal, A. (2022): Agarwal's exploration of investor preferences towards various forms of gold as an investment avenue during the pandemic offers a nuanced understanding of how the unique circumstances of the pandemic influenced investor choices among different forms of gold as a safe-haven asset. The findings contribute to the understanding of investor behavior during crises, showcasing the factors that influence investment decisions in uncertain times. This research equips investors with valuable insights into the preferences for different forms of gold, aiding them in crafting resilient and adaptive investment strategies during periods of economic turmoil.

Gaba, P., & Kumar, R. (2021): Investigating the reaction of Indian Gold Exchange-Traded Funds to COVID-19 cases and fatalities, Gaba and Kumar's study provides insightful findings on the market's responsiveness to pandemic-related developments. The study enhances our understanding of the relationship between public health crises and financial markets, offering a nuanced perspective on how investors navigate uncertainty. These findings empower investors to anticipate and respond to market dynamics influenced by external factors, contributing to a more informed and adaptive investment approach.

Suresh, M., & Keerthika (2021): Suresh and Keerthika's empirical study on behavioral trends in derivative instruments, specifically Gold ETFs, offers valuable insights into investor behavior during the studied period. The analysis of trading patterns, risk perceptions, and other behavioral aspects related to gold ETF investments deepens our understanding of how investors react to market conditions. These findings offer investors a comprehensive view of behavioral trends in gold ETF investments, aiding them in making decisions aligned with market dynamics and investor sentiment.

Sehgal, A., Sobti, A., &Diesting, S. (2021): Research by Sehgal, Sobti, and Diesting identifies whether spot markets, futures markets, or exchange-traded funds played a leading role in intraday gold price discovery and volatility connectedness, offering valuable information on the dynamics of these different market segments. The findings contribute to the understanding of how different segments contribute to price discovery and volatility, providing investors with insights into the interconnectedness of these markets. This research aids investors in developing strategies that account for the distinct roles played by spot markets, futures markets, and ETFs in shaping intraday gold prices.

Kaur, P., Singh, J., & Seth, S. (2021): Contributing to the understanding of exchange-traded funds (ETFs), Kaur, Singh, and Seth investigated their dynamics across bear and bull markets, with a focus on Indian equity ETFs. The study, published in Vision, uncovered unique patterns and behaviors within the Indian ETF market. By examining the market conditions during both bear and bull phases, the research highlighted the importance of considering different market environments in analyzing and predicting the dynamics of ETFs in the Indian context.

Mandal, N., & Das, R. (2020): Mandal and Das explored the feasibility of constructing a Timber Focused Exchange Traded Fund (ETF) in SAARC countries, with a particular emphasis on India. Their research, featured in the Handbook of Research on Managerial Practices and Disruptive Innovation in Asia, provided a comprehensive examination of the potential challenges and opportunities associated with introducing a timber-focused ETF in the SAARC region. The study offered valuable insights for policymakers and market participants interested in expanding the scope of ETFs in the region.

Kaur and Singh (2020): Kaur and Singh's study delving into the price formation process in the Indian gold market, specifically examining the role of Gold ETFs in comparison to spot and futures markets, highlighted the factors influencing gold prices and the unique contributions of ETFs. The findings offered a nuanced perspective on how Gold ETFs contribute to the price discovery process, providing investors with insights into the dynamics of the Indian gold market. This research aids investors in understanding the role of ETFs in shaping gold prices and informs investment strategies in the Indian gold market.

Chavda (2020): Chavda's research provided a pragmatic perspective on the choice between physical gold and Gold ETFs in the Indian market. The findings not only offered insights into investor preferences but also delved into risk perceptions and practical considerations influencing the decision between 'Physical Gold' and 'Paper Gold.' By exploring these factors, the research aids investors in making well-informed decisions aligned with their investment goals and risk tolerance. This study contributes valuable insights into the nuanced decision-making process investors undertake when choosing between physical gold and Gold ETFs, enhancing our understanding of the factors influencing investment preferences in the Indian gold market.

Kaur and Singh (2018): Kaur and Singh's study testing the tracking efficiency of commodity ETFs, using Indian Gold ETFs as a case study, delivered crucial insights into the effectiveness of these investment instruments. The findings revealed how well these ETFs tracked the performance of the underlying commodity, offering valuable information for investors navigating different market conditions. The study enhances our understanding of the reliability of commodity ETFs, specifically in the context of Indian Gold ETFs, providing investors with insights to assess the tracking efficiency and overall effectiveness of these instruments in their investment portfolios.

Bhuyan and Dash (2018): Bhuyan and Dash's dynamic causality analysis between gold price movements and stock market returns in India, as published in the Journal of Management Research and Analysis, uncovered a discernible dynamic relationship between fluctuations in gold prices and stock market returns. The findings suggested that changes in gold prices had a notable impact on stock market returns, contributing valuable insights into the interconnectedness of these two key financial indicators. This research equips investors and financial analysts with a deeper understanding of the complex dynamics between gold prices and stock market movements in the Indian context, aiding in more informed decision-making and risk management strategies.

Kumar, S. S. S. (2018): Kumar's critical examination of the appropriateness of using Sensex and Nifty indices as benchmarks for mutual funds in India, as published in the Jindal Journal of Business Research, raised fundamental questions about the suitability of these indices as benchmarks. The study provided a nuanced perspective on the challenges faced by fund managers in selecting appropriate benchmarks in the dynamic Indian market. By challenging conventional practices, Kumar's research contributes significantly to the ongoing discourse on benchmarking in the Indian mutual fund industry. The findings offer practical insights for fund managers, guiding them in making informed decisions about benchmark selection in the context of India's ever-evolving financial landscape.

Nalina and Shravan (2017): Undertaking a comparative analysis of investment avenues, including stocks, equity growth mutual funds, and gold ETFs, Nalina and Shravan's study, published in the International Journal in Management & Social Science, provided a comprehensive evaluation of the performance of these investment options. The findings likely highlighted the comparative strengths and weaknesses of each avenue, assisting investors in making well-informed decisions aligned with their risk and return preferences.

Biswas (2017): Biswas evaluated the performance of select Gold Exchange-Traded Funds offered by banks and non-banking financial companies in India. Published in the IUP Journal of Management Research, the study focused on the specific performance metrics of these ETFs. The findings likely offered investors insights into the relative performance of gold ETFs offered by different financial entities, aiding in portfolio decision-making.

Narend, S., & Thenmozhi, M. (2016): The panel analysis conducted by Narend and Thenmozhi in their study, published in Decision, aimed to identify the drivers of fund flows to index ETFs and mutual funds in India. The research provided valuable insights into the factors influencing investment decisions within the Indian financial landscape. The findings contribute to a deeper understanding of the determinants of fund flows, offering practical implications for investors and policymakers. This study enriches the literature on investment behavior and fund flows in the Indian context, providing guidance for market participants navigating the complexities of the financial market.

Banerjee, S. (2015): Banerjee's evaluation of the effectiveness of ETFs in indexing, with a

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focus on their role in equity investments by employees' provident funds in India, as published in the American Journal of Business, Economics and Management, offered empirical evidence on the efficacy of ETFs as investment tools in the Indian context. The findings provided valuable insights for institutional investors and fund managers considering the use of ETFs in their investment portfolios. Banerjee's research contributes to the literature on ETF effectiveness, offering practical guidance for institutional investors seeking optimal investment strategies in the Indian financial market.

Chang, C. E., & Krueger, T. M. (2015): The investigation by Chang and Krueger into the performance of fundamental index funds compared to traditional index funds, as published in the Journal of Financial Planning, challenged conventional notions about the superiority of traditional indexing strategies. The study demonstrated that fundamental index funds exhibited competitive performance, contributing to the ongoing discourse on the effectiveness of different indexing approaches in financial markets. This research provides valuable insights for investors and fund managers, prompting a reconsideration of traditional indexing strategies in favor of more dynamic and alternative approaches.

Biswas and Dutta (2015): In their study published in Global Business Review, Biswas and Dutta conducted a comprehensive assessment of market risk associated with Indian index funds. Scrutinizing various risk factors, the researchers provided a nuanced understanding of the intricacies involved in investing in Indian index funds. The insights offered in this study are invaluable for investors and financial analysts seeking to navigate the dynamic Indian financial landscape. By shedding light on the market risks associated with index funds, the research contributes to the body of knowledge that aids in making informed investment decisions.

Eswara (2015): Eswara's empirical study on the performance of gold ETFs in India during the post-crash period, as published in the Research Journal of Finance and Accounting, likely presented valuable findings on how gold ETFs performed in the aftermath of market crashes. These insights are crucial for investors seeking to understand the resilience and behavior of gold ETFs during volatile market conditions. The study likely contributed to the broader literature on risk management and investment strategies, providing nuanced insights into the performance dynamics of gold ETFs in the specific context of post-crash scenarios.

Amudha et al. (2015): Amudha et al.'s investigation into investors' perception of risk associated with Gold Exchange-Traded Funds in India, as published in the Journal of Applied Economic Sciences, likely delved into a nuanced understanding of investors regarding the risks tied to investing in gold ETFs. The findings likely provided a comprehensive picture of investors' risk perceptions, enriching our understanding of investor behavior in the gold market. This research likely contributed to the literature on investor psychology and decision-making, offering valuable insights for financial professionals and policymakers shaping the regulatory landscape for gold ETFs.

Acharya, Dwivedi, and Panchal (2015): Acharya, Dwivedi, and Panchal's application of data envelopment analysis on Indian gold ETFs, as published in the International Journal of Business Continuity and Risk Management, likely presented findings on the efficiency of Indian gold ETFs using advanced analytical techniques. The insights likely contributed to a quantitative understanding of the performance of these ETFs, providing investors and researchers with valuable metrics for evaluating the efficiency and effectiveness of gold ETFs in the Indian market. This study likely enhanced our understanding of the operational efficiency of gold ETFs, contributing to the broader discourse on performance measurement in financial markets.

Narend and Thenmozhi (2013): Narend and Thenmozhi's focus on the performance and price discovery of Gold Exchange-Traded Funds, available at SSRN, likely provided findings on how these ETFs performed and contributed to the price discovery process in the gold market. The insights likely enhanced understanding of the role played by gold ETFs in influencing gold prices, offering valuable information for market participants and policymakers. This research likely contributed to the empirical understanding of the impact of gold ETFs on market dynamics, providing investors with insights into their role in shaping gold prices.

Goyal and Joshi (2011): Goyal and Joshi's performance appraisal of gold ETFs in India, as reported in the Journal of Elixir Finance, likely presented findings on the overall performance of gold ETFs. The insights likely aided investors in evaluating the effectiveness of these investment vehicles in the Indian financial landscape, contributing to the understanding of their role in portfolios. This study likely offered a comprehensive assessment of the risk-return profile and market dynamics of gold ETFs, providing investors with valuable information for making informed decisions in the Indian financial market.

3 Research Methodology

In the pursuit of a comprehensive understanding of the performance dynamics of Exchange-Traded Funds (ETFs) in the Indian financial landscape, this study adopts a quantitative research design. The research design serves as a structured framework for systematically analyzing and interpreting numerical data, aligning with the primary objectives of the investigation.

The cornerstone of this research lies in the thorough examination and comparison of returns between two distinct categories of ETFs: Gold ETFs and Sensex ETFs. Additionally, the study aims to evaluate the differences in returns between Index ETF Regular Plans and Direct Plans in the Indian market. This quantitative approach facilitates the generation of empirical evidence to address the research objectives effectively.

To ensure a robust analysis, the study draws upon a wealth of historical data spanning a period of 10 years. This extended timeframe allows for a nuanced exploration of market conditions and economic cycles, contributing depth and context to the research findings. The data, sourced from reputable financial databases, market indices, and official reports, undergoes a meticulous collection process to maintain accuracy and reliability.

Sampling, a critical aspect of the research design, involves a systematic selection approach. Representative samples of Gold ETFs, Sensex ETFs, Index ETF Regular Plans, and Index ETF Direct Plans are chosen from the larger population to ensure statistical reliability and relevance. The population encompasses all ETFs traded in the Indian market over the past decade, making the study comprehensive in its coverage.

Dependent variables in the study include the returns of Gold ETFs, Sensex ETFs, Index ETF Regular Plans, and Index ETF Direct Plans. Independent variables encompass time (years), economic indicators, and plan types (Regular or Direct). These variables form the basis for a detailed exploration of the research objectives.

The data analysis utilizes statistical tools, including t-tests and descriptive statistics, to rigorously examine and compare returns between the identified ETF categories. The application of these tools ensures a robust and statistically sound evaluation of the research objectives.

4 Research Objectives

I To examine the extent of the difference in returns between Gold ETF and Sensex ETF in India.

II To evaluate the difference in returns between Index ETF Regular Plan and Direct Plan in India.

5 Research Hypotheses

H_{01}: There is no significant difference between Index EFT Regular Plan Return and Direct Plan Return in India.

H_{a1}: There is a significant difference between Index EFT Regular Plan Return and Direct Plan Return in India.

H_{02}: There is no significant difference between Gold ETF Return and Sensex ETF Return in India.

H_{a2}: There is a significant difference between Gold ETF Return and Sensex ETF Return in India.

6 Result and analysis

6.1 Hypothesis 1

H_{01}: There is no significant difference between Index EFT Regular Plan Return and Direct Plan Return in India.

H_{a1}: There is a significant difference between Index EFT Regular Plan Return and Direct Plan Return in India.

Table 1: Paired Samples T-Test

			statistic	df	p	Mean difference	SE difference		Effect Size
Index EFT Regular Plan Return (In %)	Index ETF Direct Plan Return (In %)	Student's t	-0.724	10	0.49	-0.0014	0.00177	Cohen's d	-0.254
Note. H_a $\mu_{\text{Measure 1 - Measure 2}} \neq 0$									

The table displays the outcomes of a statistical examination comparing the returns of the Index ETF Regular Plan and Index ETF Direct Plan. The analysis employs a student's t-test with 10 degrees of freedom, resulting in a t-statistic of -0.724 and a corresponding p-value of 0.49. The mean difference between the two measures is -0.0014, with a standard error of 0.00177. The effect size, assessed using Cohen's d, is -0.254. The null hypothesis (H_a) posits that the population mean difference between Measure 1 (Index ETF Regular Plan Return) and Measure 2 (Index ETF Direct Plan Return) is not equal to zero. These statistical findings offer insights into the significance of the observed differences between the two measures and aid in evaluating the practical importance of these variations in the context of investment returns.

Table 2 - Tests of Normality

			statistic	p
Index EFT Regular Plan Return (In %)	Index ETF Direct Plan Return (In %)	Shapiro-Wilk	0.89	0.136
		Kolmogorov-Smirnov	0.199	0.71
		Anderson-Darling	0.534	0.131

The table presents the outcomes of normality tests (Shapiro-Wilk, Kolmogorov-Smirnov, and Anderson-Darling) conducted on the return data for Index ETF Regular Plan and Index ETF Direct Plan. The Shapiro-Wilk test produces W-statistics of 0.89 and 0.136, with associated p-values of 0.199 and 0.710 for Index ETF Regular Plan and Index ETF Direct Plan, respectively. The Kolmogorov-Smirnov test yields statistics of 0.199 and 0.534, with corresponding p-values of 0.710 and 0.131. These results suggest that the return data for both plans may not significantly deviate from a normal distribution, as the p-values exceed conventional significance levels. The Anderson-Darling test, with statistics of 0.534 and 0.131, further supports this observation. In summary, the results of these normality tests indicate that the return distributions for Index ETF Regular Plan and Index ETF Direct Plan are reasonably consistent with normality assumptions.

Table 3: Descriptives

	N	Mean	Median	SD	SE
Index EFT Regular Plan Return (In %)	10	0.14	0.129	0.122	0.0366
Index ETF Direct Plan Return (In %)	10	0.145	0.131	0.121	0.0366

The table showcases descriptive statistics summarizing the return data of two distinct investment plans: Index ETF Regular Plan and Index ETF Direct Plan. The dataset comprises 10 observations for each plan. In the case of Index ETF Regular Plan, the mean return is 0.140%, the median is 0.129%, the standard deviation is 0.122%, and the standard error is 0.0366%. Similarly, for Index ETF Direct Plan, the mean return is 145%, the median is 0.131%, the standard deviation is 0.121%, and the standard error is 0.0366%. These statistics offer a concise overview of the central tendency, variability, and distribution of returns for both plans. The close alignment between the mean and median values suggests a relatively symmetric distribution, while the standard deviation and standard error quantify the dispersion and precision of the return data, respectively.

6.2 Hypothesis 2

H0: There is no significant difference between Gold ETF Return and Sensex ETF Return in India.

Ha: There is a significant difference between Gold ETF Return and Sensex ETF Return in India.

Table 4: Paired Samples T-Test

			statistic	df	p	Mean difference	SE difference		Effect Size
Gold ETF Return (In %)	Sensex ETF Return (In %)	Student's t	-1.67	10	0.125	-0.0709	0.0484	Cohen's d	-0.505
Note. H_a $\mu_{\text{Measure 1 - Measure 2}} \neq 0$									

The table outlines the outcomes of a statistical analysis comparing the returns of Gold ETF (Exchange-Traded Fund) and Sensex ETF (Exchange-Traded Fund). The statistical test applied is Student's t-test, yielding a t-statistic of -1.67, degrees of freedom (df) equal to 10, and a p-value of 0.125. The mean difference between Gold ETF and Sensex ETF returns is -0.0709%, with a standard error of this difference being 0.0484%. The effect size, gauged by Cohen's d, is -0.505. The null hypothesis (H0) posits that the population means of the two groups are equal, while the alternative hypothesis (H_a) suggests that the means are not equal. With a p-value of 0.125, there is insufficient evidence to reject the null hypothesis at conventional significance levels, indicating no statistically significant difference in the means of Gold ETF and Sensex ETF returns. The negative effect size implies moderate practical significance, emphasizing the direction and magnitude of the difference between the two measures.

Table 5: Tests of Normality

			statistic	p
Gold ETF Return (In %)	Sensex ETF Return (In %)	Shapiro-Wilk	0.744	0.039
		Kolmogorov-Smirnov	0.195	0.729
		Anderson-Darling	0.678	0.054

The table illustrates the outcomes of normality tests conducted on the returns of Gold ETF (Exchange-Traded Fund) and Sensex ETF (Exchange-Traded Fund). Three distinct statistical tests—Shapiro-Wilk, Kolmogorov-Smirnov, and Anderson-Darling—are utilized, accompanied by corresponding p-values. Regarding Gold ETF returns, the Shapiro-Wilk test yields a statistic of 0.744 with a p-value of 0.039, suggesting a departure from normality. The Kolmogorov-Smirnov test provides a statistic of 0.195 with a p-value of 0.729, while the Anderson-Darling test produces a statistic of 0.678 with a p-value of 0.054. Concerning Sensex ETF returns, the Shapiro-Wilk test indicates non-normality with a statistic of 0.744 and a p-value of 0.039. The Kolmogorov-Smirnov test results in a statistic of 0.195 with a p-value of 0.729, and the Anderson-Darling test gives a statistic of 0.678 with a p-value of 0.054. The provided p-values play a crucial role in determining the normality of the data, and values below the conventional significance level (e.g., 0.05) suggest a rejection of the assumption of normality. The note suggests that additional results from more tests may be available for a comprehensive assessment of normality.

Table 6: Descriptives

	N	Mean	Median	SD	SE
Gold ETF Return (In %)	10	0.0728	0.0755	0.121	0.0365
Sensex ETF Return (In %)	10	0.1419	0.1469	0.115	0.0348

The table presents summary statistics for Gold ETF (Exchange-Traded Fund) and Sensex ETF (Exchange-Traded Fund) returns. In the case of Gold ETF, there are 10 observations with a mean return of 0.0728%, a median of 0.0755%, a standard deviation of 0.121%, and a standard error of 0.0365%. Conversely, Sensex ETF exhibits 10 data points with a mean return of 0.1419%, a median of 0.1469%, a standard deviation of 0.115%, and a standard error of 0.0348%. These statistics provide insights into the central tendency, dispersion, and variability of the returns for both Gold ETF and Sensex ETF. The mean and median values indicate the average and middle values, respectively, while the standard deviation quantifies the spread of data points around the mean. The standard error offers an estimate of the precision of the mean.

7 Discussion and Conclusion

In examining the initial research hypothesis associated with the primary objectives, which aimed to assess and compare the returns of Index ETF Regular Plan and Index ETF Direct Plan in the Indian market, the statistical analysis did not disclose any notable difference between the two.

The absence of a significant disparity in returns between Index ETF Regular Plan and Index ETF Direct Plan aligns with prior studies in the field. Jaiswal and Singh's (2022) comparative evaluation of US and India's ETFs revealed that variations in ETF performance are not exclusively attributed to the structure of plans. The present study's findings reinforce this viewpoint, suggesting that the distinction between regular and direct plans may not be a decisive factor influencing returns.

Similarly, the non-significant difference observed in this study resonates with the results of Menakadevi, Prabha, and Natarajan's (2021) exploration of multifaceted investment behavior in different gold instruments. In both cases, the absence of statistical significance underscores the importance of considering other factors beyond plan categorization when evaluating ETF returns.

In conclusion, the research objective focused on assessing the returns of Index ETF Regular Plan and Index ETF Direct Plan in India did not reveal any noteworthy differences. This aligns with the broader literature, suggesting that plan structure alone may not be the primary driver of divergent returns. The findings underscore the need for a nuanced understanding of various factors influencing ETF performance, providing a valuable contribution to the ongoing discourse in the field.

Addressing the research objective comparing Gold ETF Return and Sensex ETF Return in the Indian context, the statistical analysis indicates that there is no significant difference between the two. These study findings align with prior research results. Garg's (2022) examination of the impact of the COVID-19 pandemic on Gold ETFs in India emphasized the influence of economic uncertainties on gold investments. While the present study did not specifically focus on a particular external factor, the overall lack of a significant difference in returns suggests that such external factors might not play a decisive role in distinguishing Gold ETFs from Sensex ETFs.

Similarly, Agarwal's (2022) study exploring investor preferences towards various forms of gold during the pandemic underscores the nuanced choices investors make in uncertain times. Although not directly addressing the comparison between Gold ETFs and Sensex ETFs, the current study's results support the idea that investor preferences may contribute to the absence of a significant difference in returns between these two types of ETFs.

In conclusion, the research objective of evaluating the returns of Gold ETF and Sensex ETF in India did not reveal any statistically significant differences. This aligns with existing literature and emphasizes the importance of considering various factors, including investor behavior and external economic conditions, in understanding the dynamics of these ETFs in the Indian stock market.

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