

ALTERNATE ASSET CLASS AND PORTFOLIO DIVERSIFICATION: AN EXPLORATORY STUDY WITH REFERENCE TO MODERN INDIAN ART

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2025

DECLARATION

I, hereby declare that the presented work in the thesis entitled “**Alternate Asset Class and Portfolio Diversification: An Exploratory Study with Reference to Modern Indian Art**” in fulfilment of the degree of Doctor of Philosophy (Ph. D.) is the outcome of research work carried out by me under the supervision Dr Vishal Sarin, working as Professor, in the Mittal School of Business of Lovely Professional University, Punjab, India. In keeping with the general practice of reporting scientific observations, due acknowledgements have been made whenever the work described here has been based on the findings of another investigator. This work has not been submitted in part or full to any other University or Institute for the award of any degree.



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CERTIFICATE

This is to certify that the work reported in the Ph. D. thesis entitled “**Alternate Asset Class and Portfolio Diversification: An Exploratory Study with Reference to Modern Indian Art**” submitted in fulfilment of the requirement for the reward of the degree of Doctor of Philosophy (Ph.D.) in the Management is a research work carried out by Anup Kumar Srivastava, 41400047, is a bonafide record of his/her original work carried out under my supervision and that no part of the thesis has been submitted for any other degree, diploma or equivalent course.



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ABSTRACT

Art investment has long captured the attention of collectors, investors, and scholars due to its unique ability to merge cultural importance with financial potential. As interest in alternative investments grows, art, especially modern Indian art, has emerged as a promising asset class for portfolio diversification. This research explores the viability of art investments as a financial tool, offering a clear investment strategy and examining the external factors that impact art investments within the broader market context. The study aims to comprehensively analyse trends, valuation models, and determinants of modern Indian art, delivering insights into its potential role in contemporary portfolio management.

Art has increasingly been recognized as a growing asset class in the face of interconnected and volatile financial markets. Traditional investments like stocks, bonds, and commodities are subject to market fluctuations, making them susceptible to significant risk during times of instability. As a result, investors have turned to alternative assets like art to diversify their portfolios and hedge against economic downturns. Historically, art has been perceived as a store of value, offering the potential for capital appreciation while also providing a hedge against inflation and financial market turbulence. However, art investments are influenced by several factors, including the artist's reputation, market demand, and broader macroeconomic conditions.

This research is built upon earlier studies that examined the use of art as an investment and identified a need for a deeper understanding of its complexities. Previous literature highlighted several gaps in research, such as the limited exploration of trends in art investment returns, the absence of comparative analysis with traditional asset classes, and the lack of a robust art valuation model. This research aims to fill these gaps and contribute significantly to the growing body of knowledge surrounding art as a financial asset, particularly within the context of modern Indian art.

One of the key objectives of this research is to analyse the historical trends and patterns of returns from art investments, with a particular focus on modern Indian art. This

analysis is conducted over a specified period, assessing how art has performed compared to other financial instruments. The primary question is whether art, as a tangible and illiquid asset, can consistently deliver returns that are competitive with more liquid and traditional forms of investment such as equities, bonds, or commodities. Auction results and market reports serve as key data sources for understanding the relationship between the art market and broader economic trends.

Returns from art investments often differ from those of traditional assets because art is typically non-correlated with the stock market. This characteristic can provide a buffer against broader financial market movements, making art an appealing option for investors looking to reduce risk and pursue less volatile investment options. The research considers not only the economic returns from art investments but also the broader cultural and emotional value of owning art. The analysis seeks to determine whether art can serve as a stable and viable investment option that enhances overall portfolio performance.

Another objective of the study is to compare Indian modern art with traditional asset classes in order to evaluate its potential for portfolio diversification. While art has long been regarded as a luxury good and a collector's item, its financial potential as an investment tool requires a rigorous comparison with traditional investments like stocks, bonds, gold, and real estate. This research conducts a comparative analysis between modern Indian art and these traditional asset classes, aiming to determine whether art can be effectively integrated into an investment portfolio.

The comparative analysis examines the risk-return profile of Indian modern art in relation to more conventional asset classes. Indian modern art presents a unique value proposition due to its cultural and historical significance, and its financial performance in recent years has been notable. However, for art to be considered a viable option within a diversified portfolio, investors must carefully weigh the risks against potential returns. This research offers a framework for understanding how art investments might fit into an overall investment strategy, considering factors such as volatility, liquidity, and long-term performance.

A significant challenge in art investment is the absence of a standardised valuation model. Art is inherently subjective, and its valuation is influenced by various tangible and intangible factors, such as the artist's reputation, historical significance, and market demand. One of the research objectives is to evaluate existing art valuation models, particularly those used for modern Indian art, to assess their relevance and accuracy.

Several valuation models have been developed over time, including auction price indices and hedonic pricing models, which consider factors such as the artwork's size, medium, and provenance. However, the unpredictable nature of the art market complicates the valuation process. This research critically examines these models and identifies their limitations in accurately determining the real-time value of modern Indian art. The goal is to propose a refined approach to art valuation that incorporates both traditional economic factors and the unique dynamics of the art market.

The final objective of this research is to explore the determinants of modern Indian art valuation, identifying the key factors that influence the price of artworks in this category. Valuing art is a complex process involving market forces and individual artist attributes. In the case of modern Indian art, prominent artists such as M.F. Husain, S.H. Raza, and F.N. Souza have commanded high auction prices in domestic and international markets, contributing to the increased recognition of this art form. This study examines how various factors, such as the artist's reputation, rarity of the artwork, exhibition history, and critical reception, contribute to its market valuation.

In addition to these intrinsic factors, the research also considers external influences, such as government policies, economic conditions, and trends in global art markets. While some determinants of art valuation can be measured through objective criteria like size, medium, and provenance, other factors are more subjective, such as the cultural and emotional resonance of the artwork. These intangible qualities can significantly influence the value of art and play a crucial role in determining prices at auctions and in private sales.

By identifying these determinants, this research provides valuable insights into the art market and its valuation processes, offering practical guidance for investors and collectors alike. The comprehensive analysis of the art market's valuation mechanisms

will aid investors in making informed decisions about art investments and help them understand the potential risks and rewards of including art in their portfolios.

This research on modern Indian art as an investment aims to deepen our understanding of art's financial potential and present it as a viable option for portfolio diversification. By exploring trends, valuation models, and key market determinants, the study offers a nuanced perspective on how art investments can contribute to contemporary portfolio management.

Keywords: Art Investment, Alternative Assets, Indian Art Market, Valuation Models, Antiquities, Collectibles, Modern Indian Art, Portfolio diversification.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The art market has long been a subject of academic inquiry, attracting attention from scholars, collectors, and investors alike, primarily due to its potential for portfolio diversification and financial returns (Baumol, 1986; Frey & Pommerehne, 1989). Traditionally, investors have relied on conventional assets such as real estate, bonds, and equities for diversification strategies. However, the art market is increasingly recognized as a viable alternative investment vehicle due to its unique characteristics, including its rarity, cultural value, and limited correlation with traditional financial markets (Renneboog, & Spaenjers, 2013). These factors make art a particularly appealing asset for those looking to reduce exposure to the volatility of standard financial markets while maintaining the potential for high returns.

This study critically examines the role of the art market as a diversification tool, specifically focusing on its historical performance and risk-return profile in comparison to other asset classes. Previous research indicates that the art market can offer returns comparable to, and in some cases exceeding, those of equities and bonds, albeit with greater volatility and lower liquidity (Goetzmann, 1993; Mei & Moses, 2002). Additionally, art is often regarded as a "store of value" during times of economic uncertainty, providing a hedge against inflation and market downturns (Worthington & Higgs, 2004). This research will analyze the historical data on art market returns, focusing on both short-term fluctuations and long-term trends, to evaluate its suitability as part of a diversified investment portfolio.

Moreover, the study will offer practical insights for prospective investors by reviewing how individuals can effectively engage with the art market. Issues such as market transparency, transaction costs, and the impact of taste and trends on art valuations will be addressed to provide a comprehensive understanding of the risks and rewards associated with art investment (Velthuis, 2011). By synthesizing the existing literature and analyzing relevant financial data, this research aims to provide a well-rounded

assessment of the art market's viability as an alternative asset class in modern portfolio management.

1.1.1 Background and Rationale of Study

Investors have long pursued portfolio diversification strategies to minimize risk and optimize returns. Traditionally, these strategies have centered on a combination of stocks, bonds, and cash, following the principles of Modern Portfolio Theory (Markowitz, 1952). However, the past few decades have seen increasing interest in alternative asset classes, including commodities, real estate, private equity, and art. These assets have become popular due to their potential to enhance portfolio performance and offer diversification benefits, especially in times of market volatility (Bodie, Kane, & Marcus, 2014).

Art, in particular, has emerged as a prominent alternative investment, extending beyond its conventional role as a luxury good or status symbol. The global art market has experienced significant growth, with modern and contemporary art attracting substantial prices at auctions and galleries. According to Artprice (2020), the global art market was valued at \$64.1 billion in 2019, reflecting a 5% year-over-year increase. This growth highlights art's increasing role as an asset class for investors seeking to diversify their portfolios and mitigate exposure to the fluctuations of traditional financial markets.

The Indian art market has similarly experienced robust growth, supported by the country's rich cultural history and expanding economy. Modern Indian art, in particular, has gained considerable attention, with numerous works by leading artists achieving record-breaking auction prices. In 2019, the Indian art market was valued at approximately \$223 million, with modern and contemporary art accounting for 65% of the total market (Bakhru, 2022). This growing demand for Indian art reflects its rising significance both within the country and internationally as a potential investment vehicle.

Despite the increasing interest in art as an investment, comprehensive empirical research on its performance as an asset class remains limited. Much of the existing literature has concentrated on the cultural and economic importance of art, leaving gaps in understanding its role in portfolio diversification (Campbell, 2008). While some studies have examined the art market's historical performance, these analyses often focus on global markets, leaving regional art markets, such as India's, underexplored.

This study seeks to fill this research gap by conducting an exploratory analysis of the Indian modern art market to evaluate its performance as an alternative investment. By assessing its risk-return characteristics, the study aims to determine the extent to which Indian art can serve as an effective tool for portfolio diversification. Furthermore, the research will explore the risks associated with art investments, including liquidity constraints, market opacity, and susceptibility to trends. It will also examine factors influencing art prices, such as artist reputation, auction house dynamics, and broader economic trends.

The insights gained from this study will contribute to the growing body of knowledge on alternative investments and provide valuable perspectives for investors considering entry into the art market. By exploring the performance of modern Indian art, this research aims to inform stakeholders about its potential for portfolio diversification and offer practical guidance for navigating the associated risks.

1.1.1.1 Explanation of Alternate Asset Classes and Portfolio Diversification

Historically, investors have diversified their portfolios by allocating investments across traditional asset classes, such as bonds, stocks, and cash instruments. However, in the past decade, there has been a marked increase in interest in alternative asset classes, including real estate, commodities, private equity, and art (Ziemba & Ziemba, 2007). These alternative assets differ from publicly traded securities, often characterized by lower liquidity and more complex valuation methods. Despite these challenges, alternative assets are increasingly sought after for their potential to enhance portfolio diversification and reduce overall risk.

Portfolio diversification, at its core, involves the strategic allocation of investments across different asset classes to manage risk. The premise is that various assets respond differently to market conditions, thus distributing risk across a broader spectrum of investments (Fabozzi, 2007). By spreading investments among assets with low correlations, investors aim to reduce the overall volatility of their portfolios, making them more resilient to market downturns (Ziemba & Ziemba, 2007).

The concept of portfolio diversification gained significant recognition with the development of Modern Portfolio Theory (MPT) by economist Harry Markowitz, for which he was

awarded the Nobel Prize in Economics. MPT posits that investors can achieve an optimal balance between risk and return by diversifying their holdings across different asset classes, focusing on maximizing returns while minimizing risk (Markowitz, 1952, 1991). According to MPT, by understanding the performance and correlation of various assets, investors can construct portfolios that align with their individual risk tolerance and financial goals.

Alternative asset classes, such as real estate, commodities, and private equity, are particularly valuable in a diversified portfolio due to their low correlation with traditional investments like stocks and bonds. For instance, during periods of market volatility when equities may underperform, alternative assets may exhibit resilience, offering more stable returns (Campbell, 2008). This potential for non-correlated performance makes alternative assets effective tools for mitigating risk within a portfolio (Invest, 2023)

One of the primary reasons alternative assets are increasingly integrated into investment strategies is their capacity to respond differently to macroeconomic conditions. For example, during economic downturns, commodities like gold often perform well due to their role as safe-haven assets, while real estate may continue to generate stable rental income even as equity markets fluctuate. By incorporating these alternative assets, investors can enhance portfolio stability, particularly in turbulent market environments.

Despite their diversification benefits, alternative assets are not without risks. Illiquidity is a major concern, as many alternative assets, such as private equity or fine art, cannot be easily sold or converted into cash. This illiquidity can pose significant challenges during market downturns when investors may need quick access to capital ((Fabozzi & Markowitz, 1991). Additionally, the valuation of alternative assets is often complex, given the lack of readily available market prices. Investors must rely on appraisals or other valuation methods, which can introduce uncertainty (Fabozzi & Markowitz, 1991).

Regulatory risks also affect alternative assets, as ownership, operation, and sale of these investments are subject to varying regulations across different jurisdictions. Non-compliance with these regulations can result in legal challenges and financial penalties. Moreover, alternative assets are still exposed to market risks, similar to traditional assets.

Economic conditions, interest rate fluctuations, and changes in supply and demand can all impact the value and returns of alternative assets.

Given these risks, investors must carefully evaluate the role of alternative assets within their portfolios. While these assets can provide attractive returns and diversification benefits, they require thorough due diligence and a clear understanding of the investor's financial objectives and risk tolerance. Working with financial advisors who specialize in alternative investments can help investors navigate the complexities of these asset classes and construct portfolios that are well-suited to their long-term goals (Siegel, 1994).

1.1.1.2 Why Alternate Asset Classes are Becoming Popular

In recent years, there has been a noticeable surge in investor interest toward alternative asset classes, encompassing a diverse range including real estate, commodities, private equity, art, and more. Several factors contribute to the growing popularity of these alternative investments among investors.

Firstly, alternative asset classes offer enticing diversification benefits. Traditional asset classes like stocks and bonds often exhibit high correlations, meaning they may move in tandem during market downturns, potentially leading to significant losses for investors. In contrast, alternative assets, such as commodities or real estate, tend to display lower correlations with traditional assets. This characteristic enables them to act as effective risk diversifiers within a portfolio, reducing overall risk and enhancing diversification advantages (Poon & Jirasakuldech, 2013).

Secondly, alternative asset classes provide rewards that can often be elusive in more conventional investing vehicles. For instance, the art market has proven to be highly profitable despite its limited connection to more conventional asset markets. The Knight Frank Luxury Investment Index found that between 2010 and 2020, art outperformed common investment vehicles such as equities and bonds, with an average yearly return of 6.4%.

Thirdly, the global economy's growth has resulted in increased wealth creation, especially in emerging markets like India and China. Consequently, investors in these markets are seeking to diversify their portfolios and explore investment opportunities in alternative asset classes.

Technological advances have greatly facilitated investors' access to alternative assets. Online platforms and financial instruments such as Real Estate Investment Trusts (REITs) have facilitated investors' participation in the real estate market. Additionally, digital platforms have simplified the process of investing in art and other alternative assets, leading to increased adoption of these assets. In light of these factors, alternative asset classes have emerged as appealing options for investors looking to enhance their portfolio diversification, pursue potential higher returns, and navigate the changing landscape of global wealth creation and technological advancements.

Finally, the low-interest rate environment in many countries has led investors to seek alternate sources of income. Alternative asset classes, such as infrastructure or private equity, offer potential income streams that may not be available through traditional asset classes.

Alternative asset classes are becoming popular among investors due to their potential diversification benefits, potential returns, increasing wealth creation in emerging markets, advances in technology, and low-interest rate environment. These factors collectively contribute to the attractiveness of alternative assets as viable investment options for portfolio diversification and income generation.

1.1.1.3 Importance of Portfolio Diversification for Investors

Portfolio diversification is a strategic investment approach aimed at minimizing portfolio risk by spreading investments across a wide range of asset categories and securities (Bodie, Kane, & Marcus, 2014). The importance of portfolio diversification stems from several compelling reasons.

Firstly, portfolio diversification serves as an effective risk mitigation tool. By distributing investments across different asset classes and instruments, investors can reduce the impact of adverse events on any single investment. This diversification helps maintain portfolio stability by limiting excessive fluctuations and potential losses during market downturns.

Secondly, portfolio diversification has the potential to enhance investment returns. Through thoughtful allocation across various asset classes and securities, investors can target improved returns for a given level of risk. Different asset classes and securities exhibit

distinct risk-return profiles; for instance, stocks may offer higher long-term returns but with greater volatility compared to bonds. By combining these assets in a diversified portfolio, investors can potentially achieve higher returns while managing risk effectively.

Thirdly, portfolio diversification contributes to the achievement of long-term financial objectives. A diversified portfolio can potentially deliver consistent and stable returns over time, aiding investors in reaching critical financial goals such as retirement savings or funding education expenses for their children.

Additionally, portfolio diversification plays a role in managing investor emotions and preventing irrational investment decisions. During market downturns, investors may be tempted to sell their investments out of fear, leading to significant losses. Diversification helps investors avoid emotional decision-making and adhere to a disciplined long-term investment strategy.

Portfolio diversification is a powerful investment strategy that allows investors to minimize risk, target improved returns, achieve long-term financial goals, and maintain discipline during market volatility. Through careful asset allocation and diversification, investors can construct resilient portfolios capable of navigating market fluctuations and serving as robust vehicles for wealth accumulation and financial security.

1.1.1.4 Introduction to Modern Indian Art as an Alternate Asset Class

Investing in art has a longstanding tradition that has endured over time. In recent years, it has garnered significant attention as a desirable alternative asset class for investors seeking to diversify their portfolios. Among the various segments within the art world, modern Indian art has emerged as a focal point due to its growing prominence and attractiveness, thus forming the core focus of this exploratory study.

The domain of modern Indian art has demonstrated itself as a lucrative investment avenue, evidenced by a notable escalation in the prices of Indian art pieces, particularly evident in their success at international auctions (Sood, 2017). This trend is primarily propelled by a rising interest among Indian and international investors in modern Indian art. Concurrently, there is a heightened acknowledgment and appreciation for the intrinsic aesthetic and cultural value embedded within Indian art (Khandwala, 2014).

Recent years have seen a proliferation of galleries, art fairs, and innovative digital platforms within the Indian art market. These advancements have facilitated easier access and convenience in buying and selling Indian art, further augmenting the allure of modern Indian art as an investment avenue (Bhagat, 2019).

With the objective of delving deeper into the dynamics of modern Indian art as an alternative asset class, this exploratory study seeks to shed light on its potential benefits for investors, unraveling its intriguing prospects and considerations for those aiming to enrich their portfolios through the captivating realm of art.

As an alternative asset class, modern Indian art offers several potential advantages for investors. One such advantage is the potential for high returns, as evidenced by the significant appreciation in value observed in certain Indian art pieces over time (Sood, 2017). Indian art also represents a tangible asset, providing investors with a sense of security and a hedge against inflation (Khandwala, 2014). Furthermore, investing in Indian art can serve as a means for investors to actively support and engage with the Indian art community, while also contributing to the preservation of India's rich artistic heritage (Bhagat, 2019).

This study aims to enhance understanding of the potential benefits associated with investing in modern Indian art as a distinct asset class and its role in diversifying investment portfolios. The analysis encompasses an examination of the primary factors influencing the pricing and demand for Indian artwork. A comprehensive investigation has been undertaken to gain deeper insights into the associated risks within this burgeoning and dynamic asset class.

Furthermore, this research endeavors to elucidate the inherent risks associated with investments in Indian art, thereby equipping investors with the necessary knowledge for informed decision-making and adept navigation of the complexities characterizing this asset class. As this study delves into the relatively unexplored realm of art as an investment avenue, it presents a comprehensive and enlightening investigation capable of empowering investors and stakeholders to make prudent investment choices in the domain of modern Indian art.

1.1.1.5 Current Status of the Indian Economy and Investment Patterns

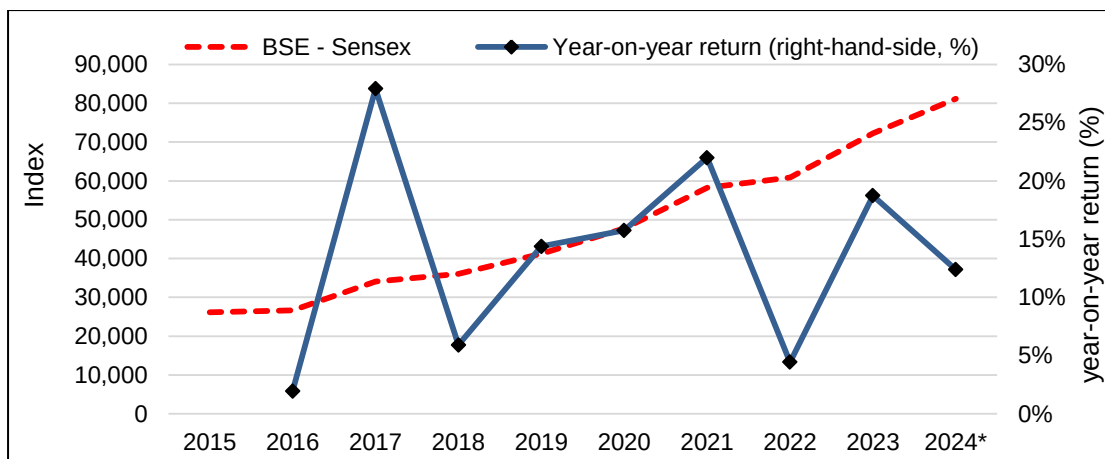
India has undergone remarkable economic expansion and progress in the past decade, establishing itself as one of the fastest-growing economies globally. This development has coincided with significant advancements in poverty reduction, improvements in education, and increased access to essential services for its vast population, which exceeds 1.4 billion people. Last year (2023), the total population of India surpassed China and it became the world's most populous nation (World Population Dashboard, n.d.).

Despite the challenges posed by the COVID-19 pandemic, the Indian economy has exhibited strong resilience, with a projected GDP growth rate of 6.0% to 6.8% in 2023-24 (Ministry of Finance, Government of India, summary of the Economic Survey 2022-23) ((Press Information Bureau, n.d.)) Looking forward, India's economy is expected to grow at 8.9% compound annual growth rate (CAGR) over the period FY2023-2028 (Bisen et al., 2013)

The service sector is the primary driver of India's economic success, contributing over 55% to the country's GDP and demonstrating consistent growth at an average rate of 7.5% over the past decade (World Bank, 2021). Concurrently, the manufacturing sector is significant, constituting 25% of India's GDP and growing at an average rate of 6.9% over the same period (World Bank, 2021). Agriculture also plays a crucial role, contributing approximately 16% to India's GDP in 2023 (World Bank Group, 2024 - CC-BY 4.0., n.d.)

To leverage India's immense growth potential and attract foreign investment, the government has implemented various economic reforms and launched flagship programs such as "Make in India" and "Startup India." These initiatives aim to position India as a global manufacturing hub and foster entrepreneurship and innovation, already drawing substantial foreign investments.

India's robust economic growth and ongoing reform efforts make it an exceptionally attractive destination for domestic and foreign investors seeking opportunities in a vibrant and expanding market. The country's consistent upward trajectory and commitment to economic development have solidified its position as a significant player in the global economy.



*Source: BSE, 2024; * 2024 data as of 6 September 2024*

Figure 1.1: Indian equity market has steadily grown over the years

The Indian stock market has demonstrated a robust and sustained upward trajectory over the past decade, reflective of the country's broader macroeconomic resilience and growth. As illustrated in the chart, the BSE Sensex index has grown significantly from around 26,000 points in 2015 to an unprecedented high of over 81,000 points by September 2024 (BSE, 2024). This growth has been punctuated by occasional volatility, as seen in the year-on-year return percentages, which spiked above 25% in 2017 and 2021, and dipped notably in 2018 and 2022, demonstrating the cyclical nature of the equity market and global macroeconomic shocks including COVID-19. Despite these fluctuations, the overall trend remains positive, with the index displaying an approximate threefold increase over the ten-year period, underscoring long-term investor confidence.

The year-on-year return, plotted on the right axis, fluctuates between 0% to nearly 30%, suggesting periodic bursts of strong equity performance followed by corrections. For instance, the return surged in 2017, aligning with post-demonetization reforms and pro-business policies, and again in 2021, corresponding to a recovery after pandemic-induced contraction. The sharp decline in 2018 and 2022 mirrors economic slowdowns and external uncertainties. These variations highlight the Indian stock market's sensitivity to both domestic reforms and global conditions, yet its ability to rebound swiftly indicates strong underlying fundamentals (Bombay Stock Exchange, 2024).

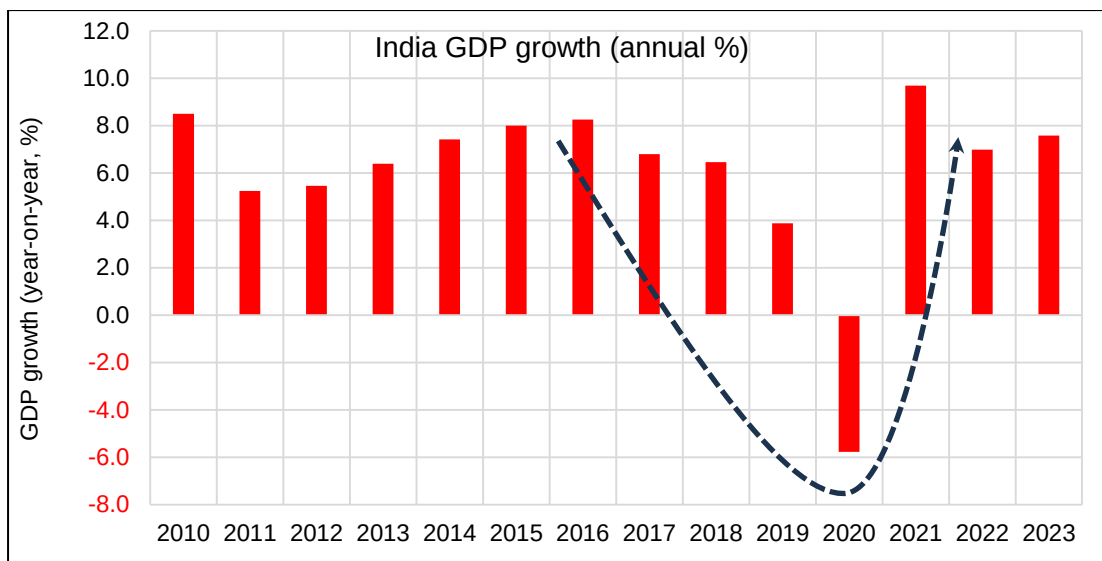
This stock market performance complements India's overall economic narrative. The country has consistently recorded one of the fastest GDP growth rates globally, with a projected CAGR of 8.9% for FY2023–2028 (Bisen et al., 2013). A sector-wise analysis reveals that services, manufacturing, and agriculture have each contributed significantly to GDP growth. Services alone account for over 55% of GDP, growing at an average annual rate of 7.5% (World Bank, 2021), while manufacturing and agriculture contribute approximately 25% and 16%, respectively (World Bank Group, 2024).

Concurrently, investment patterns in India are evolving. Traditionally dominated by equities and mutual funds—illustrated by mutual fund AUM reaching INR 64.7 lakh crore by July 2024—investors are increasingly diversifying into alternative asset classes like private equity, venture capital, hedge funds, and real estate (Association of Mutual Funds in India, 2024; PwC, 2015). Though still emerging, the alternative investment market in India is growing rapidly, expected to reach USD 32 billion by 2020 from USD 16 billion in 2014 (PwC, 2015). These developments align with government-led initiatives such as “Make in India” and “Startup India,” which aim to enhance India’s attractiveness as a global investment destination and stimulate innovation and entrepreneurship.

In summary, the chart illustrates the Indian equity market’s sustained expansion and resilience, contextualized by strong economic growth, policy support, and evolving investment behavior. These factors collectively affirm India’s position as a promising and dynamic landscape for both domestic and global investors.

1.2 Present State of Indian Economy

Following a deep shock to the global economy due to the COVID-19 in 2020-2021, which also adversely impacted the state of the Indian economy, the nation’s economic situation has gradually recovered and the Indian economy has become one of the fastest growing economies in the world. After contracting 1.4% in FY2021, India’s nominal GDP (in current prices) surged 21.8% in FY2022. Looking ahead, India’s nominal GDP is expected to grow at compound annual growth rate (CAGR) of 8.9% over the 5-year time period from FY 23 to FY 28 (World Bank Data, RBI, IMF, 2023).



Source: World Bank national accounts data, and OECD National Accounts data files.

Figure 1.2: India's economic growth: Strong recovery since COVID-19

Despite these positive indicators, the Indian economy faces several significant challenges. A notable issue is the persistently high levels of unemployment, which surged notably in the aftermath of the pandemic. According to the Centre for Monitoring Indian Economy (CMIE), the unemployment rate in India peaked at 23.5% in April 2020 (CMIE, 2020). However, since then, the unemployment rate has fallen to 9.2% in June 2024 (CMIE, 2024). Another challenge is the substantial levels of inequality within the economy. Although the Gini coefficient, which is a measure of income inequality, has fallen from 0.359 in 2017 to 0.328 in 2021 ((Poverty and Inequality Platform, n.d.)), it remains much lower than the most developed and major emerging regions of the world. This indicates that the benefits of economic growth have not been evenly distributed across the populace in the country.

Despite these challenges, the Indian economy has witnessed several positive developments. For instance, the Indian economy is experiencing a steady acceleration in investment, a crucial factor for driving economic progress. The Reserve Bank of India (RBI) reports a steady rise in the gross fixed capital formation, a gauge of investment, from 33.3% of GDP in 2022-2023 to 34.1% in 2023-2024 (RBI Annual Report, May 2024).

Moreover, there has been an uptick in foreign direct investment (FDI), indicating increased foreign investors' confidence in the economy. The Indian government has implemented a

range of policies and initiatives to enhance FDI in the country. Liberalization of policies which boost foreign investments, particularly in retail, defense, insurance, and single-brand retail trading, have helped country to attract overseas investments. According to the Department for Promotion of Industry and Internal Trade (DPIIT), India's cumulative FDI inflow stood at USD991 billion between April 2000-March 2024. Consequently, India secured the third-highest investment for the greenfield projects in the world, as per the World Investment Report (2023).

1.2.1 Overview of the Indian Economy

The Indian economy has demonstrated substantial growth over the past few decades, positioning itself as one of the world's fastest-growing economies. This growth, coupled with India's large consumer market, has made it an attractive investment destination (Rangarajan, 2019). This study examined recent investment trends and the prevailing economic conditions in India.

Projections indicate that India's economy is set to ascend from being the world's sixth-largest to the third-largest by 2030 (World Bank, 2021). Over the preceding decade, India's GDP has maintained an annualized growth rate of 7.5%, marking it as one of the global leaders in economic expansion (World Bank, 2021). Several factors have contributed to India's economic surge, including its youthful and expanding population, the growth of its middle class, and a conducive business environment fostered by favorable policies.

The current economic landscape of India presents a mixed scenario of opportunities and challenges for high-net-worth individuals (HNIs) contemplating investments. On one side, India boasts a burgeoning consumer market, a highly skilled workforce, and an investor-friendly business environment, making it appealing for both domestic and foreign investments. Conversely, the nation grapples with economic challenges such as elevated income inequality, sluggish job creation, and a relatively underdeveloped financial market, posing potential hurdles for investors.

One prominent avenue for investment by HNIs in India is the equity market. Despite short-term fluctuations, the Indian stock market has exhibited robust growth in recent years, reaching an all-time high with the BSE Sensex index surpassing 81,000 points in July 2024

(Bombay Stock Exchange, 2024). HNIs can participate in Indian equities through various channels like mutual funds, exchange-traded funds, and direct stock acquisitions.

Mutual funds represent a favored investment avenue in India, with assets under management (AUM) reaching a record high of over INR 64.7 lakh crore in July 2024 (Association of Mutual Funds in India, 2024). HNIs can leverage the expertise of professional fund managers and achieve diversification not easily attainable through individual securities.

Real estate emerges as another attractive investment sector for HNIs in India, offering stable long-term returns and potential capital appreciation (Haskins, 2021). The real estate domain in India has undergone significant reforms in recent years, including the implementation of the Real Estate (Regulation and Development) Act, 2016, and the establishment of a real estate investment trust (REIT) framework, opening new vistas for investors.

Private equity also presents an option for HNIs in India, involving investments in privately held non-publicly traded companies. This investment avenue offers prospects for high returns but also carries elevated risk (Investopedia, 2021). India's private equity market has witnessed growth, with investments reaching USD39 billion in 2023 (Bain & Company, 2024). Although the level of private equity investment was lower than previous years (USD62 billion in 2022), the slowdown was primarily driven by global factors, including weakened investor sentiment and persistent macroeconomic headwinds, such as high interest rates, softening consumption, and geopolitical tensions.

However, the Indian economy faces several challenges that may impact investors. Income inequality remains pronounced, with the wealthiest 1% of the population holding over 50% of the nation's wealth (Oxfam, 2021). Job creation has been sluggish, and although unemployment rates in urban areas have fallen recently from 6.8% in Jan–Mar 2023 to 6.7% in Jan–Mar 2024 (Ministry of Statistics & Programme Implementation – 2024), large population of the country makes it a point of worry for the government.

For HNIs contemplating investments in India, the current economic environment presents both opportunities and challenges. While there are enticing prospects in the stock market,

mutual funds, real estate, and private equity, investors must carefully weigh these against India's economic concerns. HNIS must assess both short- and long-term economic trends in India and consider the potential impact of structural issues and external shocks on their investment portfolios.

1.2.2 Recent Economic Performance

Recent indicators suggest a recovery trajectory for the Indian economy despite the challenges posed by the COVID-19 pandemic and subsequent economic downturn. As mentioned earlier, a stellar recovery in 2021 following the COVID-19 induced slowdown in 2020 is the testimony of the country's strong fundamental economic base. As highlighted before, India's nominal GDP is expected to grow at compound annual growth rate (CAGR) of 8.9% over the 5-year time period from FY 23 to FY 28 (World Bank Data, RBI, IMF, 2023).

Drilling down further, according to the International Monetary Fund (IMF), India experienced a 7.7% decline in GDP in 2020, marking one of the sharpest contractions among major economies (IMF, 2021). This downturn was primarily attributed to the pandemic-induced lockdowns, which severely impacted economic activities. Nevertheless, as mentioned earlier, the economy made a stellar recovery to become one of the fastest growing economies around the world.

Despite this rebound, persistent challenges remain for the Indian economy. As mentioned earlier, the income inequality remains a pressing issue, with the wealthiest 1% of the population controlling over half of the nation's wealth (Oxfam, 2021). The pandemic has also underscored the urgent need for increased investments in healthcare infrastructure, as India faces significant challenges in its healthcare response (NITI Aayog, 2021).

While India's economy has shown resilience and recovered from the pandemic-induced slowdown, critical issues persist. High-net-worth individuals (HNIs) contemplating investments in India must conduct thorough analyses of the economic landscape, considering both risks and opportunities within the country's evolving economic scenario.

1.2.3 Trends and Challenges

Income inequality has persistently plagued the Indian economy, drawing attention from scholars and policymakers alike (Kumar & Pate, 2021). Despite notable strides in poverty reduction, economic disparity remains stark, with the wealthiest 1% of the population holding a substantial share of the nation's wealth (Oxfam, 2021).

Moreover, inflation has emerged as a significant hurdle for the Indian economy, with persistent spikes in prices, particularly in food and fuel sectors, alongside supply-side constraints. Although inflation has been a cause of concern for the global economy as a whole, heightened inflationary pressures have eroded consumer purchasing power and escalated borrowing costs for businesses, exacerbating the economic slowdown in the country (World Bank, 2021).

India being an emerging economy, needs substantial government support for the various public services, which leads to higher expenditure than the income. A substantial fiscal deficit, therefore, further compounds India's economic challenges, stemming from elevated government spending coupled with sluggish tax revenues. This imbalance has constrained essential public investments in crucial sectors like healthcare, education, and infrastructure, raising concerns about long-term debt sustainability. Addressing the fiscal deficit requires concerted efforts to boost tax revenues, curtail nonessential expenditures, and enhance the efficiency of public services (IMF, 2020).

These multifaceted challenges underscore the imperative for India to undertake comprehensive reforms aimed at rectifying structural weaknesses and fostering a conducive environment for business growth and employment generation. Such reforms necessitate collaborative endeavors involving government, businesses, and civil society to tackle issues like labor market regulations, infrastructure enhancement, and fostering innovation and entrepreneurship (World Bank, 2021).

1.3 Investment Trends in India

As highlighted earlier, investment trends in India have witnessed a significant surge in foreign direct investment (FDI) inflows over the past decade, positioning the country as an

attractive destination for global investors (World Bank, 2021). This rise in FDI can be attributed to several factors, including proactive government policies aimed at facilitating foreign investments, such as the relaxation of FDI restrictions, simplification of tax procedures, and the establishment of Special Economic Zones (SEZs) to foster business growth and development (Shah, 2019). Indian government's Make in India initiative has further bolstered international investors' interest in the country.

India's strategic focus on key sectors has also contributed to the influx of FDI, with notable investments pouring into sectors such as services, construction, and telecommunications (World Bank, 2021). The services sector, encompassing areas like information technology (IT), healthcare, and financial services, has emerged as a major recipient of foreign investments due to India's skilled workforce and growing market demand (Shah, 2019).

Furthermore, the construction sector has attracted substantial FDI, driven by infrastructure development projects, urbanization initiatives, and the government's emphasis on affordable housing schemes (Shah, 2019). The telecommunications sector has also seen significant FDI inflows, particularly with the rapid expansion of digital infrastructure, increasing internet penetration, and the rollout of 5G technology (World Bank, 2021).

1.3.1 Traditional and Alternative Asset Classes

In the realm of investment choices in India, historical preferences have leaned heavily towards equity markets and real estate ventures among local investors (Cavaliere et al., 2021). However, recent years have witnessed a notable shift towards exploring alternative asset classes such as private equity, venture capital, and even artworks. Among these alternatives, modern Indian art has emerged as a particularly promising avenue for investment (Garg, 2018).

India's economic landscape stands out as one of the fastest-growing globally, showcasing remarkable resilience even in the wake of the COVID-19 pandemic. This resilience has attracted substantial foreign investment into the country over the past decade, spurred on by a series of proactive government initiatives aimed at bolstering the economy. Despite persistent challenges such as income inequality, India remains an attractive investment destination, especially for investors seeking diversification within their portfolios.

1.3.2 Current Investment Scenario

Over the past decade, the investment landscape in India has undergone substantial transformations driven by multifaceted factors encompassing governmental policies, technological advancements, and shifts in investor behaviors. One of the most noticeable shifts has been the growing significance of institutional and retail investors in shaping investment trends within the country. According to the Department for Promotion of Industry and Internal Trade (DPIIT), India's cumulative FDI inflow stood at USD991 billion between April 2000-March 2024. Consequently, India became the third-highest investment destination for the greenfield projects in the world, as per the World Investment Report (2023).

This surge in FDI inflows can be attributed to a series of proactive measures undertaken by the Indian government aimed at enhancing the investment climate. These measures include policy reforms, the expanding Indian economy, and the heightened competitiveness of Indian businesses on the global stage.

Another noteworthy transformation in investment trends pertains to the rising significance of technology and innovation as drivers of economic growth and investment in India. The burgeoning technology sector in the country, fueled by the emergence of startups and the widespread adoption of technology across various industries, has attracted substantial investment into technology firms and the development of novel technologies. Recognizing the pivotal role of technology and innovation in fostering economic growth, the Indian government has initiated programs like Digital India and established technology parks to promote technological advancements nationwide.

The expansion of the Indian middle class and the increasing affluence of Indian consumers have further contributed to shifts in investment trends. The heightened purchasing power of Indian consumers has spurred a surge in demand for consumer goods and services, leading to increased investment in consumer-focused industries such as retail, healthcare, and financial services. This trend has been accelerated by the growth of e-commerce and the widespread adoption of digital payment methods, facilitating easier access to goods and services and presenting new investment prospects in these sectors.

Additionally, the Indian government's efforts to improve the business environment and facilitate investment in the country have played a pivotal role in shaping investment trends. Reforms aimed at enhancing the ease of doing business, streamlining regulations, and easing restrictions on foreign investment have incentivized companies to invest in India, fostering more investment inflows into the country.

Furthermore, the burgeoning financial sector and the availability of capital have been instrumental in shaping investment trends over the past decade. The growth of the financial sector, coupled with the development of new financial products and increased credit availability, has facilitated easier access to capital for businesses, encouraging investment in new projects and ventures.

Institutional investors such as mutual funds, pension funds, and insurance firms have witnessed a significant increase in their role in shaping investment trends. The mutual fund industry in India, for instance, has witnessed rapid expansion, with average assets under management (AUM) around INR 64.7 lakh crore in July 2024 (Association of Mutual Funds in India, 2024). It has surged from Rs. 4.9 trillion in March 2011, representing a substantial gain as reported by the Association of Mutual Funds in India (AMFI). This rise can be attributed to the growing popularity of mutual funds among Indian investors and increased optimism among foreign investors regarding the Indian economy.

Similarly, retail investors have emerged as pivotal drivers of investment trends, driven by heightened financial literacy, the expansion of digital financial services, and increased availability of investment products and services. The growth of digital financial services, including online trading platforms and mobile apps, has facilitated easier access to investment opportunities for retail investors, encouraging more participation in the financial markets.

The investment landscape in India has witnessed significant transformations over the past decade, driven by a confluence of factors including government policies, technological advancements, and evolving investor preferences. These transformations have not only attracted increased investment into the country but have also diversified investment avenues, fostering a more dynamic and robust investment environment.

1.3.3 Investment Trends among Institutional and Retail Investors

India has witnessed major changes in investment trends among institutional and retail investors. These changes have been driven by a combination of government policies, technological advancements, and shifts in investor behavior. Some of the key changing investment trends in India among institutional and retail investors in the last 10 years are:

1.3.3.1 Growth of Mutual Funds and other Investment Products

The assets under management (AUM) of mutual funds in India have increased significantly over the last decade, increasing from Rs. 4.9 trillion in March 2011 to Rs. 31.1 trillion in March 2021 (Association of Mutual Funds in India (AMFI), 2021). The rising interest in mutual funds among Indian savers is largely responsible for this expansion. Investment products and services, such as equity-linked savings plans (ELSS) and term deposits, are becoming more widely available, making it simpler for ordinary investors to put their money into various financial assets.

1.3.3.2 Increased Adoption of Digital Financial Services

The expansion of digital financial services in India, including online trading platforms and mobile apps, has simplified the accessibility of investment products and services for retail investors and has encouraged more investment into the financial markets. Accenture's analysis reveals a significant surge in digital transactions in India, with the number rising from 70 million in 2011 to 870 million in 2021 (Accenture, 2021).

1.3.3.3 Reforms to Improve Ease of Doing Business

The Indian government has implemented several reforms aimed at enhancing the economic condition of the country in order to entice foreign investment. Among these reforms have been the elimination of barriers to foreign investment and the streamlining of regulatory processes. These alterations have simplified the investment process in India, enticing more capital to flow into the country.

1.3.3.4 Growth of the Indian Economy

The growth of the Indian economy and the increasing competitiveness of Indian businesses in the global marketplace have also had a significant impact on investment trends among institutional and retail investors in India. The country's expanding

economic growth and investors' growing trust in the Indian economy have encouraged more investment into the country and have driven the growth of the financial markets.

1.3.3.5 The Increasing Importance of Technology and Innovation

The growing significance of technology and innovation in fueling economic growth and investment has also greatly influenced investment patterns among institutional and retail investors in India. The growth of the technology sector in India, driven by the rise of startups and the widespread integration of technology in various industries across all sectors, has resulted in a surge of investment in technology companies and the development of new technologies.

These are some of the major changing investment trends in India among institutional and retail investors in the last 10 years. These changes have been driven by a combination of government policies, technological advancements, and shifts in investor behavior and have had a profound influence on the investment landscape in India.

1.3.4 Different Investment Tools to Diversify the Investment Portfolio

The potential losses from any one investment can be reduced by increasing the portfolio's diversification. Various investment choices are accessible to aid investors in achieving portfolio diversity. Several highly popular choices include:

1.3.4.1 Traditional Investments

Traditional investments refer to investments in assets such as stocks, bonds, mutual funds, and real estate that have been commonly used by individuals and institutions for generations to grow their wealth and achieve financial goals. These types of investments are often seen as relatively safe, stable, and predictable, and have been a cornerstone of financial planning for many people. These asset classes are considered to be the foundation of a well-diversified portfolio and are used by investors to achieve their financial goals. Traditional investments refer to financial instruments that have been used for centuries and have a proven track record of generating returns for investors. These investments include stocks, bonds, mutual funds, real estate, and commodities.

Stocks, bonds, mutual funds, REITs, and commodities are all examples of suitable investments.

Stocks are a way to gain returns from the firm you invest in through dividends and price appreciation. Bonds are a form of lending provided to a firm or government, whereby the lender receives interest payments and the repayment of the original loan amount upon maturity. By pooling their resources, investors in mutual funds can acquire a wide range of securities. Income from real estate comes from rent and appreciation, while that from commodities like gold or oil comes from trading at a price determined by supply and demand. Investments entail distinct risk and reward profiles; therefore, investors must carefully evaluate them in light of their objectives, risk appetite, and investment time horizon when deciding how to allocate their assets. Here are some of the most commonly found traditional asset classes:

Stocks and Equities: Stocks and equities are commonly chosen by individuals seeking to broaden their investment portfolios. Stocks and equities have the potential to generate significant returns, particularly over a long period. In addition, the wide variety of companies listed on stock exchanges offers investors a multitude of investment choices. (Mladjenovic, P. 2010)

Mutual Funds: Mutual funds are financial instruments used for investing purposes that combine the capital of many buyers to acquire a broad range of securities. Investors can take advantage of the knowledge and experience of qualified fund managers by making mutual fund investments and achieve greater diversification than they could by investing in individual securities. (Haskins, 2021)

Bonds and Fixed-income Securities: Bonds and fixed-income securities are popular investment avenues for those seeking stability and income. This is because these investments offer a fixed rate of return and are less volatile than stocks and equities. (Haskins, 2021)

1.3.4.2 Alternative Investments

The notion of alternative investments has been in existence for some decades and has gained increased popularity in recent years as a means to encompass a wider array of investing choices beyond conventional stocks, bonds, and cash.

Alternative investments have become increasingly common among investors seeking to broaden their portfolios and potentially achieve greater returns. Investment experts, academics, and financial media have all used the term to describe various unconventional types of investments, such as hedge funds, private equity, commodities, real estate, and collectibles. Alternative investments refer to investments outside of traditional stocks, bonds, and cash offerings. Alternative asset classes are a group of investments that are not typically included in a traditional investment portfolio. The purpose of these asset classes is to provide investors with the chance to enhance portfolio diversification while potentially attaining greater returns compared to conventional investment methods. Some popular alternative asset classes include: Real assets like real estate and commodities, as well as alternative investment techniques like hedge funds and private equity, are examples of this type of investment.

Real Estate: Real estate presents an appealing opportunity for individuals seeking to broaden the range of their investment holdings. Real estate investments offer consistent and enduring profits, together with the possibility of increasing the value of the invested capital (Haskins, 2021).

Commodities: Those seeking to diversify their portfolios may find commodities, including gold, silver, and oil, to be an alternative investment option. Commodities offer a degree of diversification that is not correlated with stocks or bonds and are frequently employed as a hedge against inflation (Bouchentouf, A, 2011).

Cryptocurrencies: Cryptocurrencies, such as Bitcoin, have become increasingly popular as an investment avenue in recent years. While cryptocurrencies are relatively new and highly volatile, it offers a unique form of diversification that is not influenced by traditional investments.

Art and Collectibles: Art and collectibles can include anything from fine art to vintage cars, stamps, and coins. These investments are often less liquid than other alternatives but can provide a unique opportunity for diversification and potential appreciation. Art investments offer a unique kind of diversification that is not influenced by typical investments and can also provide the opportunity for an increase in capital value.

However, it is essential to keep in mind that investing in art may be a high-risk, high-reward proposition and that it should be done with prudence because of this.

Private Equity: "Private equity" refers to capital investments made in privately owned, non-publicly traded businesses. substantial gains are possible, but so is substantial danger with this investment strategy. (Investopedia. 2021)

Hedge Funds: Hedge funds use strategies including leverage, derivatives, and short selling to increase their profit margins. Hedge funds are a type of investment vehicle that uses a wide variety of strategies to generate returns, including leverage, derivatives, and short selling. These are some of the popular investment avenues used to diversify investment portfolios. The choice of investment avenue will be based on the specific investor's objectives, willingness to accept risk, and time frame for investing.

1.4 Art as an Alternate Asset Class

In recent years, art has grown in popularity as an alternative investment option, with increasing numbers of investors considering art as an investment option. In general, alternative assets are considered those that are not commonly traded on traditional financial markets such as stocks, bonds, and mutual funds. Real estate, private equity, hedge funds, commodities, and collectibles such as art are examples of alternative assets.

The potential for large profits is one of the main reasons for the increased interest in art as an investment. Art has beaten the S&P 500 index in terms of investment returns during the last two decades, according to an analysis by Artprice, a global leader in art market intelligence (Artprice, 2020). Another factor for art's rising popularity as an investment is its lack of link with typical financial markets. As a result, the fluctuation in art prices does not always align with the fluctuation in other investment types. This makes art a potentially valuable asset for investors looking to diversify their portfolios (Deloitte, 2019).

An additional factor contributing to the growth of the art industry is the increasing interest in art as an investment among high-net-worth individuals (HNIs) residing in

emergent economies, such as China and India. For example, in India, the art industry has expanded dramatically over the last decade, with sales reaching INR 293 crore in 2018, up from INR 40 crore in 2008 (Garg, 2018).

Investing in art, however, comes with unique challenges and risks. The opaque nature of the art market constitutes one of the obstacles that must be overcome. In contrast to conventional financial markets, the art market operates with minimal regulation, posing challenges in accessing precise and current data on art prices and the worth of specific artworks (Deloitte, 2019). This lack of transparency can lead to issues such as overvaluation, undervaluation, and market manipulation.

In addition, art is a highly illiquid asset, making it challenging to sell a piece of artwork promptly, especially during periods of market turbulence. Unlike stocks or bonds, where investors can quickly sell their holdings through a broker, selling artwork can take months or even years. In addition, the assessment of an artwork's worth can be quite subjective and can fluctuate based on factors like the artwork's condition, the artist's reputation, and the artwork's origin.

Though art can provide high potential returns and can serve as a diversification tool, art investment necessitates an in-depth knowledge of the art market and the distinct hazards and difficulties linked to investing in this particular category of assets.

1.4.1 Art and Economics

Art and economics, which initially seemed to be separate domains, are closely intertwined in several ways. The economic impact of art is significant and extends to various areas of the economy including trade, employment, and investment. This study explores the relationship between art and economics by examining the various ways in which the two domains intersect.

Firstly, art can be viewed as an industry that creates jobs and contributes to economic growth. The art industry encompasses a wide range of professions, from artists and designers to curators and gallery owners. In 2023, the global art market was valued at around USD 65 billion, and the industry employed approximately 3 million people

worldwide (Art Basel and UBS, 2024). Overall, the cultural and creative industries, which also includes art, provide 6.2% of all employment (United Nations, 2022).

However, amid a global environment of high interest rates, inflation, and political instability in some regions, the global art market sales fell moderately by 4% compared to 2022. Nonetheless, the art market has been growing steadily, with emerging markets such as China and India becoming significant players in recent years (Deloitte, 2018). Consequently, this expansion has resulted in a surge of employment prospects and economic vitality within the industry.

Moreover, art is also a form of investment and can be seen as another asset class. Art has the potential to provide high returns and can be used as a diversification tool for investors. According to a report by Artprice, the annual return on investment in art between 2000 and 2020 was 5.5%, outperforming other traditional investment options such as bonds and gold (Artprice, 2021). This has led to the emergence of art investment funds and increased participation in art auctions by institutional investors and high-net-worth individuals (HNIs).

Additionally, art has a significant impact on trade and tourism. Art fairs, exhibitions, and cultural events can attract tourists worldwide and generate revenue for local economies. For example, the Art Basel fair in Switzerland reportedly contributes around CHF 100 million to the local economy each year (Art Basel, n.d.). Moreover, art exports and imports also significantly affect global trade. As per a study by the UN Conference on Trade and Development (Unctad), global exports of the creative economy exceeded USD1.62 trillion in 2020 (Cabral, 2022), which is higher than the GDP all countries in the world (except the top eleven), if we consider World Bank data for the year 2021. The World Trade Organization states that, the global trade of creative goods, including art and cultural products, accounted for 3% of global trade in 2015 (World Trade Organization, 2018).

1.4.2 Art Investment during Financial Crisis

During a financial crisis, investors frequently seek alternative assets that might serve as a hedge against market volatility. In this light, art has emerged as an appealing

investment prospect, with some investors resorting to art to diversify their portfolios and preserve capital.

Historically, art has been a reliable asset class during times of economic turbulence. According to one analysis, artworks outperformed all other investments in occupied France during WWII (Moses, 2013). The rising desire for portable and discrete assets such as artworks and collecting stamps raised their values, implying that they may be considered as cryptocurrencies, with demand shifting depending on the context and the need to conceal value. Since the end of World War II, buying and selling art has grown in popularity, with auction houses reporting record turnovers and record values being paid in quick succession (Moses, 2013). In 1947, Vincent van Gogh's "Irises" was purchased for \$84,000 (less than \$0.5 million in today's valuation), yielding a real rate of return of about 12% (Bowen, 1997) when sold at auction by Sotheby's New York in November 1987 for \$53.9 million (including the auction house's 10% commission).

On September 15, 2008, Sotheby's London auction house and British artist Damien Hirst experienced tremendous success, even in the midst of the global financial crisis triggered by the collapse of Lehman Brothers (Vogel, 2008). Despite the financial market calamity, collectors continued to shell out millions of dollars on modern art, such as cabinets full of medications, cigarette butts, or gems (Vogel, 2008). This could imply that the financial sector and the art market are not interconnected.

The 2008 financial crisis, on the other hand, demonstrated the interconnection of global markets, and a single occurrence might set off a chain reaction that would cause substantial issues for the whole financial system (Fraser-Sampson, 2011). To get modest risk protection, investors must diversify their portfolios across several asset types. Many consumers believed they had a well-diversified portfolio, although the equities and bond markets looked to be highly connected (Fraser-Sampson, 2011).

Research conducted by ArtTactic and Deloitte indicates that the art market experienced a transient decline in both sales volume and prices amidst the global financial crisis of 2008, but the industry swiftly rebounded, with sales volumes returning to pre-crisis levels by 2010 (Deloitte, 2011). Similarly, during the 2000-2002 dot-com meltdown, art

values continued to rise, although at a reduced pace compared to previous years (Moses, 2004).

One reason for the art market's resiliency during times of crisis is that it is remarkably immune to swings in the larger economy. A variety of variables impact art prices, including supply availability, collector demand, and the perceived worth of particular pieces. These variables are often unconnected to broader economic indices like GDP growth or interest rates.

The distinctive qualities of the asset class have also contributed to the attraction of art as an investment during times of crisis. Unlike stocks or bonds, art is a physical asset that its owners can exhibit and enjoy. This implies that art may have both emotional and financial value, making it more tempting to investors during times of uncertainty.

Many individuals have pondered for decades whether it is possible to achieve a satisfactory financial gain from their artworks, alongside the joy they derive from owning them. The key research by Bowen & Baumol (1997) was one of the first to examine long-term returns on the art market, which may impede investors' ability to transfer their assets swiftly in the case of a financial disaster. Finally, investing in art necessitates a high degree of skill, as investors must be able to choose works with significant appreciation potential and ensure that they are properly housed and maintained.

Because of its relative stability and distinctive features as an asset class, art has arisen as an alternative investment possibility during times of financial crises. However, investors should proceed with caution when investing in art because the market involves both dangers and possible profits.

1.4.3 Indian Art as an Investment

Indian art has garnered escalating attention as a viable investment option in contemporary times. Concurrent with the expansion of the Indian economy and its deepening integration into the global landscape, the Indian art market has exhibited heightened dynamism, attracting a burgeoning cohort of collectors and investors (Roy

2021). In the subsequent section, an analysis is undertaken to discern the investment potential of Indian art, while scrutinizing the determinants of this prevailing trend.

One of the main reasons for the growing interest in Indian art as an investment is its historical significance and cultural value. Indian art has a long and rich history, dating back to ancient civilizations such as the Indus Valley and the Mauryan Empire. Indian art is also known for its diversity, with different regions and cultures producing unique styles and forms of art. This diversity and richness of Indian art make it a valuable cultural asset that can appreciate gradually (Mukherjee, 2019).

Another element supporting the expansion of the Indian art industry is the increasing proportion of affluent individuals in India and throughout the world seeking alternative investment opportunities. As traditional investment routes such as equities and bonds grow increasingly unpredictable and uncertain, more investors are turning to art to diversify and earn profits (Kumari, 2021). For such investors, Indian art is an appealing option because it has traditionally produced good long-term returns and has the potential for financial appreciation.

1.4.3.1 Indian Art

Indian art is a rich and diverse field that has been shaped by the country's long history, cultural traditions, and religious influences. Sculptures and seals representing animals, people, and religious symbols from the Indus Valley Civilization (3300 BCE–1300 BCE) are the oldest known Indian art.

Over the centuries, Indian art has been influenced by various cultures, including the Mughals, who brought Persian art and architecture to India during the 16th and 17th centuries. Indian paintings, particularly miniature paintings, reached new heights of excellence during this time. The famous Mughal miniature paintings include the *Padshahnama* and the *Hamzanama*.

Women in the Mithila area of India and Nepal are responsible for one of the most well-known traditions of Indian art: Madhubani, also known as Mithila. Famous for its vivid hues, strong contours, and ornate patterns, Madhubani paintings typically reflect religious and mythological themes (Chowdhury, 2018).

Another important form of Indian art is sculptures, which have been used to adorn Hindu temples and palaces for centuries. Some of the most famous sculptures in India include the intricate carvings at the Khajuraho temples (Kramrisch, 1981) and the towering statue of Lord Shiva in the town of Mamallapuram (Gimson, 2000).

In modern times, Indian art has gained recognition on the global stage, with Indian artists winning awards and participating in exhibitions around the world. Additionally, the Indian government has taken steps to promote and preserve the country's artistic heritage, including the establishment of the National Museum in New Delhi (National Museum, n.d.) and the Lalit Kala Akademi, the National Academy of Art (Lalit Kala Akademi, n.d.).

The lengthy history and numerous cultural traditions of India have given rise to a vibrant and varied artistic culture. From ancient Indus Valley seals to modern-day paintings and sculptures, Indian art continues to inspire and captivate people around the world.

1.4.3.2 Art Investment in India

Investing in Indian art has been increasingly popular in recent years as more and more individuals realize the lucrative opportunities available to them via doing so. However, because of the immaturity of the Indian art market, potential buyers should conduct their homework on the artists and pieces they intend to acquire.

Consider the artist's history, the work's rarity and distinctiveness, and its condition before making an investment in Indian art. with addition, you should be well-versed with the state of the Indian art market, including its historical context, present trends, and comparable values.

Additionally, knowledge of the legal and regulatory climate pertaining to art investment in India is crucial. This includes understanding the laws and regulations surrounding the import and export of art, as well as the tax implications of investing in art.

Over all, investing in Indian art may present a lucrative opportunity; however, prior to making any investment decisions, it is critical to exercise prudence and conduct thorough research.

1.4.3.3 The History of Art Investment in India

British officials and merchants during the colonial era were the first to gather Indian art and antiquities as an investment. But it wasn't until the 20th century that the Indian art market took off and became well known.

Historically, affluent and illustrious ancient European families have spread their money among three main categories: stocks, bonds, and other securities; real estate; and arts, precious metals, jewels, and the like. This practice dates back to the 17th century. In the 17th century, the Netherlands had the first major art boom, and Dutch paintings are still the most costly in the world today. The practice of "name buying" has been around since the 18th century and is often employed today. (Mitter, 1994)

The art market was not such active in the financial market in 1990's. Presently, the size of art is USD 5 trillion, and it is expected to grow with leaps and bounds shortly. This growth is the resultant of high art market sales in the 20th century, which has grown tremendously where the number of transactions has grown by appreciable level. Reviewing the adequate increase in both Art prices and its dynamics, experts' projects that the Art market will prove to be the better option than in the 19 centuries.

The main reason for this projection is that there is a more significant assortment of buyers and the risk spread is more as compared to what it was earlier in 19 centuries. Another reason for the same is that the global exposure of the art market helps the investors try new options for their diversified portfolio to increase their return on investment. This option has relevance to those millionaires who reflect their wealth through investment in art furthermore, the level of art prices projects the wealthy investors across the globe.

In the 1950s and 1960s, a new generation of Indian artists began to gain international recognition, leading to increased interest in Indian art among collectors. In the 1970s and 1980s, the government of India began to take an active role in promoting Indian art, both domestically and internationally.

The 1990s saw the emergence of various private art galleries and auction houses in India, further fueling the growth of Indian art bazaar. In recent years, the Indian art

market has experienced significant growth, with increasing numbers of domestic and international collectors showing interest in Indian art.

However, even though the Indian art market is growing, it is still relatively small compared to other major art markets such as New York, London and Hong Kong. The Indian art investment scene is still in its nascent stage and is expected to grow with more awareness and education about art investments.

1.4.3.4 Emergence of Indian Art as an Alternative Investment Preference

Indian art is becoming a popular alternative investment due to its rising demand, appreciation, and worth. India's rich cultural heritage and diverse artistic traditions have underwritten to the advent of Indian art as an alternative investment preference.

The rising Indian economy, the internationalization of the Indian art market, and the expanding knowledge and interest in Indian art among local and foreign collectors all contribute to the rising interest in Indian art as an investment choice. Various art collectors and investors in India's art market has risen sharply in recent years, contributing to the industry's rapid 15% CAGR over the past decade (KPMG, 2019).

The emergence of Indian art as an investment preference is also due to the fact that it is considered a tangible asset that can be held and appreciated, unlike other financial instruments such as stocks or bonds, which can be subject to market fluctuations. In addition, Indian art is often seen as having little connection to other asset classes like stocks and property. This characteristic can be beneficial for investors looking to diversify their portfolios (Biswas, 2021).

The development of Indian art as an asset preference has also been driven by the growing demand for contemporary Indian art. Contemporary Indian art, which includes works by established and emerging artists, has gained international recognition in recent years, with Indian artists participating in prestigious exhibitions and art fairs around the world (Christie's, 2020).

The growing demand for contemporary Indian art has led to an increase in prices, with some works selling for millions of dollars at international auctions. This has attracted

the attention of Ultra HNIs, HNIs, and art funds, People are increasingly diversifying their portfolios and gaining rewards by investing in Indian art. (KPMG, 2019).

The rise of Indian art as a viable alternative investment option may be traced to several different variables. One of these aspects is the increasing demand for Indian art., including the growing Indian economy, the globalization of the Indian art market, and the increasing demand for contemporary Indian art. The increasing interest in Indian art as an investment option has led to a significant increase in the figure of art collectors and investors, and had attracted the attention of HNIs and art funds. As the Indian art market continues to grow and mature, it is probable that it will remain an appealing choice for investors seeking diversification and possible profits.

The emergence of Indian art as an alternative investment preference has been observed in recent years. Amidst the ongoing uncertainties in the global economy, investors are progressively turning their attention to alternative investments including art, to diversify their portfolios and potentially increase returns. Indian art, in particular, has gained recognition on the global stage, with Indian artists winning awards and participating in exhibitions around the world.

According to recent estimates, the Indian art industry is worth between Rs 1000 and Rs 1200 crore, with paintings accounting for the majority of the market (The Economic Times, 2018). The market has increased dramatically over the last decade, with major sales like Tyeb Mehta's painting, which fetched \$120,000 in 1995, causing a sensation in the Indian art market (The Economic Times, 2018). The industry continued to expand and reached a high in 2007 with a market size of Rs 2,000 crore.

The industry has undergone various obstacles in recent years, including demonetization and the installation of the Goods and Services Tax (GST) impacting the industry. The GST implementation, in particular, led to a slowdown in the market due to confusion about the tax rates for different artworks (Gupta, 2018). Despite these challenges, there are still significant opportunities in the market, including the growth of online art sales and increased interest in Indian contemporary art (Khan, 2020).

It is essential to keep in mind that the art market in India is still relatively underdeveloped in compared to markets in other countries, such as China and the United States. However, there is reason to be optimistic about future development as the sector evolves and adapts to new difficulties (The Economic Times, 2018).

While the art market offers an extra source of return with an appealing risk-reward ratio, the non-transparent nature of the market can make it difficult to judge if the numbers are biased or wrong when analyzing auction market sales for which data are available to the public. Nevertheless, the cohesive method to the measurement of ROI in art has been created, and investors are becoming increasingly comfortable with including art in their financial portfolios.

The mass media often covers the most recent sale of a valuable painting. Art and investment are the two factors that lead us to view an art piece as a potential investment. This study aims to understand Indian art as an alternative asset class and its impact on diversifying investment portfolios.

Furthermore, in today's economic environment, many investors seek other investment options to protect themselves from the stock market's disastrous downturn effects. Not unexpectedly, the stock market's volatility has piqued investors' interest in the art market. In addition to its aesthetic value and its representation of noble principles, art is today appreciated as an investment. Several investors have been drawn to this isolated market with greater profits and economic stability over the last decade. The value of art remains relatively stable compared to the volatility of the stock market. Investing in art portfolios can result in a steady source of income and the possibility of long-term capital gains. As an artist, it is vital to emphasize the importance of having a major object and a primary style, as well as to assess the value of a painting by examining the artist's traits in the painting.

The market is currently booming in all categories, particularly modern art, with the value of a huge number of bought pieces gradually growing. The market is getting more worldwide as a result of the emergence of Indian art. Art from emerging countries such as China, India, and the United Arab Emirates is becoming increasingly popular among both domestic and international buyers. These nations purchase art, but as people get

wealthier, more investors from these countries arrive. Patriotism also plays a role in the expansion of developing-country art markets; many collectors buy works from their home nations as a patriotic gesture and a symbol of their cultural identity.

Despite the recent economic slump, fine art has held up well, with auction houses consistently reporting record prices. An analysis was conducted to determine why modest art funding have been expanding for the past four years while effectively developing a successful image. Fearful investors are seeking alternative assets as an investment due to uncertain stock market returns. Art as an investment is becoming more popular, but supply is limited. Investing in art is thus more difficult than investing in stocks or bonds.

India's share in the global art market is less than 2% of the total global art market. However, the Indian art market is on an upswing and is expected to boom in the coming years as there is significant growth potential. After a sudden increase in 2000, the Indian art market faced a sudden downturn in 2008 due to a global economic slowdown. However, the recent Christie's auction, which took place in Mumbai on December 19, 2013, has reignited curiosity about the workings of the Indian art market.³The Indian art market reached its peak in 2008, having grown from \$5 million to \$350 million between 2000 and 2007. Towards the end of 2013, the total sales of the Indian market stood at \$100 million, with an expectation of substantial growth in the coming years. (see Deloitte, 2016, Deloitte, 2017 Deloitte, 2018, Read, 2019 & Knight Frank,2019).

From 2000 to 2007, the Indian art market witnessed an extraordinary surge in prices. As a result, investing in art became trendy; art galleries, each auction established a new record, and it appeared that virtually anybody could create an Indian art fund. Despite recent advances, the 2008-09 crash in the Indian art market has many collectors wondering, "Is art a good investment?"

The Indian art market had a boom from 2000 to 2007, thanks mostly to NRI and international investment, with the auction component of the market increasing from 11 crores in 2001 to 648 crores in 2006 and then somewhat dropping to 475 crores in 2007. In September 2006, the auction market for Indian art had some of the greatest sales,

with seven domestic and foreign auction houses generating about 220 crores in a single month.

Indian art marketing gained popularity during the 2008 recession. For a period, the global and Indian art markets resisted the trend, but the fall of Lehman Brothers and other financial turmoils slowed the market's progress, and it got enveloped in the calamity. Along with almost any other type of product or service demand. Art as an investment is a relatively new notion in India. While the great majority of Indians, wealthy and poor alike, do not consider art to be an investment, a few HNIs and wealth managers may dedicate some of their portfolio to it.

Christie's auction in Mumbai in December 2014 earned roughly \$12.1 million, or Rs. 75,27,45,000, with 90 percent of the items and 97 percent of the value selling. This accomplishment illustrates Indian painters' competence and artistry, as well as increased confidence in the Indian art market. In the first half of the following year, the Indian art market expanded by 42 percent.

The value of Indian art as an investment category is growing. Auction sales of modern and contemporary Indian art in Luxembourg, as reported by Deloitte totaled \$49.5 million in 2013, representing a 32% increase over 2002 levels. According to a Deloitte poll, 76% of art buyers made investments in art and collectibles in 2014, up from 53% in 2012. Many potential Indian investors, however, have yet to discover the allure of art and antiques. According to BMW's CEO, "economic progress is impossible unless the value of culture in determining identity is recognized."

1.5 Art Markets

The art market refers to the buying and selling of artworks, including paintings, sculptures, photography, and other forms of artistic expression. The art market has evolved significantly over the years, and has become a significant industry in its own right, with various players, including galleries, auction houses, dealers, collectors, and investors, operating within it.

The international market for artworks has seen tremendous increase in the last decade, with sales reaching \$64.1 billion in 2019, an increase of 2% from the previous year

(TEFAF Art Market Report, 2020). However, the market is highly fragmented, with the majority of sales being made in the top-tier segments of the market. In fact, the top 5% of the market accounts for almost 60% of sales by value (Art Basel and UBS, 2019).

The art market is unique in that it is highly subjective and speculative, and there are no fixed prices for works of art. Market demand and supply take into account a number of variables, including the artist's stature, the rarity and quality of the work, and the state of the economy. As a result, prices for works of art can be highly volatile, and can vary greatly over time.

One of the key players in the art market is auction houses. These houses are responsible for organizing art auctions and are involved in the sale of a significant proportion of the art that is traded on the market. The top three auction houses in the world are Christie's, Sotheby's, and Phillips, which collectively account for around 90% of the global auction market (TEFAF Art Market Report, 2020).

Another significant player in the art market is galleries. Galleries are responsible for exhibiting and selling works of art, and are often the first point of contact for collectors and investors. Furthermore, they serve a pivotal function in fostering and cultivating budding artists, offering them an avenue to exhibit their creations and acquire industry acclaim.

The role of art collectors and investors in the art market cannot be overstated. These individuals are responsible for driving demand and determining prices for works of art. They also play a vital role in preserving the cultural heritage of a country, as many works of art are considered national treasures and are protected by government regulations. The global art market has experienced growth in recent years due to the rise of new art purchasers from emerging nations, including China, India, and Russia (Art Basel and UBS, 2019).

In conclusion, the art market is an intricate and diverse industry that continues to evolve and grow. While the market is subject to volatility and uncertainty, it remains an attractive investment opportunity for those who understand its dynamics and are willing to accept the risks involved.

1.5.1 The Global Art Markets

The global art market is a vast and complex industry that includes buying, selling, and collecting various forms of art, such as paintings, sculptures, and other works of art. The art market is an essential aspect of the cultural industry and has significant economic and social impacts.

The global art market experienced significant growth in recent years, reaching a record high of \$64.1 billion in sales in 2019 (Art Basel & UBS, 2020). Nevertheless, the COVID-19 pandemic had a profound impact, leading to a substantial 22% drop in sales by 2020 (Knight 2021). This analysis delves into the future prospects of the global art market, considering both the challenges it confronts and the potential opportunities on the horizon.

According to the 2021 Art Basel and UBS Global Art Market Report, the market's value plummeted to \$50.1 billion in 2020, reflecting the pandemic's adverse effects—an alarming 22% decrease compared to the prior year (Art Basel and UBS, 2021). However, the report offers a glimmer of hope, projecting a recovery with anticipated growth between 5% to 10% in 2021.

The United States is still the greatest market for art, the survey finds, accounting for 42% of global sales. The United Kingdom is the largest market, making over 20% of global sales, followed by China (20%). The research also emphasizes the increasing share of sales made online, which will rise from 9% in 2019 to 25% in 2020.

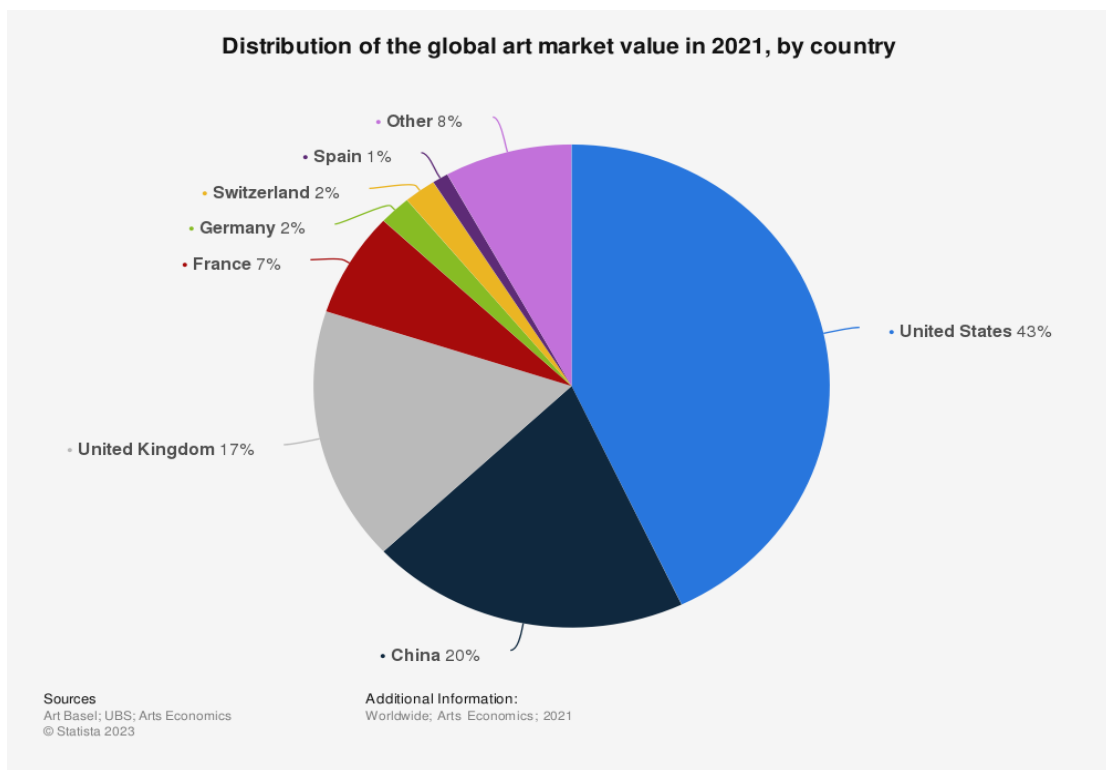
Furthermore, the report indicates that the contemporary art market is the largest sector, accounting for 41% of global sales. The modern art market represents 23% of global sales, followed by post-war and contemporary art, which accounts for 19% of sales.

One of the primary challenges facing the global art market is the ongoing pandemic. While some galleries and auction houses have shifted their focus to online sales, this has not been enough to offset the loss of revenue from canceled events and reduced foot traffic. As a result, some experts predict that the market may take several years to recover fully (Knight, 2021). However, others point to the resilience of the art market, which has historically weathered economic downturns and geopolitical crises (Art Basel & UBS, 2020).

Another challenge facing the art market is the issue of authenticity. With the proliferation of fakes and forgeries, collectors and investors are becoming increasingly wary of the market (Debs, 2021). This has led to increased demand for experts in art authentication, as well as new technologies such as blockchain, which can be used to verify the authenticity of artworks (Gibson, 2019).

Despite these challenges, there are also opportunities for growth in the art market. One potential area for growth is in emerging markets, particularly in Asia. According to a report by Art Basel and UBS, Asia is now the second-largest market for art, accounting for 22% of global sales (Art Basel & UBS, 2020). This trend is likely to continue as the region's middle class grows and becomes more interested in collecting art.

Another potential opportunity for growth is in the area of NFTs (non-fungible tokens). These digital tokens are being used to buy and sell digital art, offering a new revenue stream for artists and collectors (Rogers, 2021). While the market for NFTs is still relatively new, it is expected to grow rapidly in the coming years.



Source: Art Basel; UBS; Arts Economics

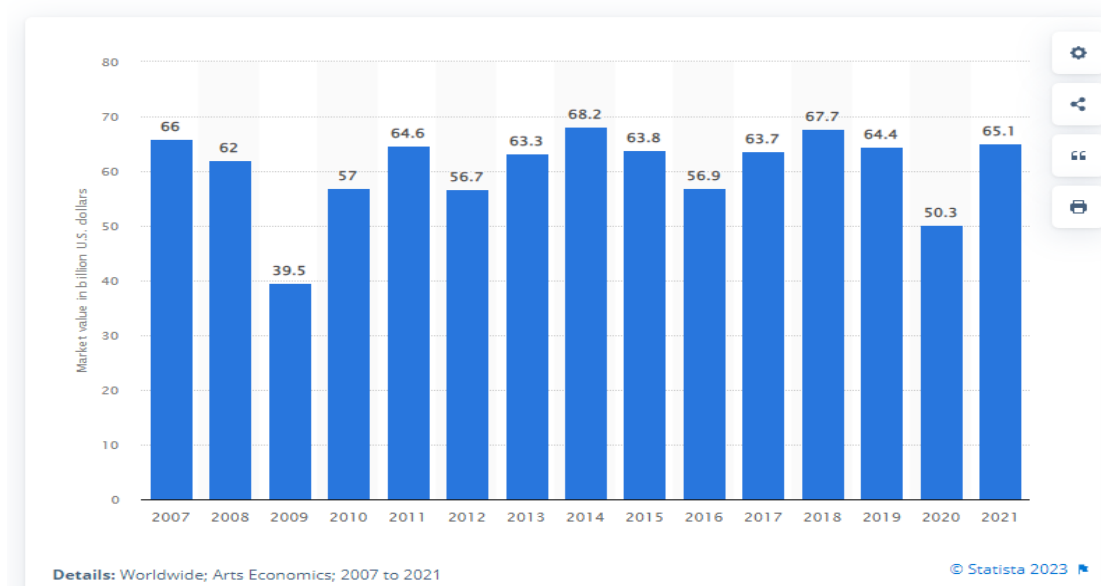
Figure 1.3: Distribution of Global Art Market Share by Value in 2021

The United States accounted for 42% of worldwide sales in 2020, making it the largest art market by value, while China accounted for 21% (Art Basel & UBS, 2021). It's worth mentioning that the current COVID-19 epidemic has had a major impact on the art market, and that this influence is projected to continue to affect the market share by value in 2021.

The Global Art Market's Expected Value in terms of Sales from 2007 to 2021:

Since the last few decade, the global art market's sales value has fluctuated widely. In 2019, the global art market experienced a significant boost, with sales reaching an impressive \$64.1 billion. This marked a 6% increase compared to the previous year, as reported by the Art Basel & UBS Global Art Market Report 2021. Nevertheless, the COVID-19 epidemic had a significant impact on the art market, with sales of artwork declining by 22% in 2020 (Knight, 2021).

Sales value of the art market worldwide from 2007 to 2021 *(in billion U.S. dollars)*



Source: Art Basel; UBS; Arts Economics

Figure 1.4: Sales Value of the Art Market Worldwide from 2007 to 2021

Here are the figures that offer a broader perspective on the global art market's sales value between 2007 and 2021:

In 2007, the global art market achieved sales of \$55.3 billion (Art Basel & UBS, 2019).

In 2008, the global art market faced a significant decrease in sales, amounting to \$39.5 billion in 2008. This decline was attributed to the global financial crisis that occurred during that time (Art Basel & UBS, 2019).

From 2009 to 2011, the global art market saw a steady recovery, with sales reaching \$65.9 billion in 2011 (Art Basel & UBS, 2019).

In 2012, the global art market experienced a slight dip in sales to \$63.7 billion (Art Basel & UBS, 2019).

From 2013 to 2015, the global art market saw moderate growth, with sales reaching \$68.2 billion in 2015 (Art Basel & UBS, 2019).

In 2016, the global art market saw a decline in sales to \$56.6 billion, which was attributed to a lack of high-quality artwork available for sale (Art Basel & UBS, 2019).

From 2017 to 2019, the global art market experienced a period of growth, with sales reaching a record \$64.1 billion in 2019 (Art Basel & UBS, 2021).

In 2020, the global art market experienced a significant decrease in sales as a result of the COVID-19 pandemic. Sales decreased to an estimated \$50.1 billion (Knight, 2021).

Overall, the global art market is a vibrant and dynamic industry that continues to evolve and adapt to changing economic and social conditions. With the growth of online sales and the increasing demand for contemporary art, the art market's future looks promising. Still, the future of the global art market is uncertain, with both challenges and opportunities on the horizon. Despite the ongoing pandemic, the art world has consistently demonstrated its resilience in the face of challenges. As the market continues to evolve, it is likely that new technologies and emerging markets will play a significant role in shaping its future. The sales value of the global art market has experienced significant fluctuations in the past decade, with periods of growth and decline attributed to various factors such as the global financial crisis, the availability of high-quality artwork, and the ongoing COVID-19 pandemic. Nevertheless, the market has demonstrated its ability to adapt and is projected to undergo further changes in the future.

1.5.2 The Indian Art Market

The art market in India has experienced significant growth in recent years. This growth has been fueled by the rising affluence of the Indian middle class and a growing fascination with Indian art among collectors and investors, both domestically and internationally. Additionally, the Indian government has made efforts to promote the country's art and culture, which has also contributed to the growth of the art market. However, the market is still relatively small compared to the international art market and is dominated by a few major players.

The Indian art market has been growing in recent years, driven by increasing interest from domestic and international collectors, as well as a growing economy and rising disposable incomes. In addition, the Indian government has implemented measures to encourage the country's art and culture, including through the establishment of museums and exhibitions, which has helped to raise the profile of Indian artists and their work.

The Indian art market has a rich and diverse history that spans thousands of years. From the ancient rock art and temple carvings of the Indus Valley civilization to the magnificent Mughal paintings and textiles of the 16th and 17th centuries, to the contemporary works of modern and contemporary Indian artists, Indian art has always been an integral part of the cultural and economic fabric of the country.

Over the past few years, the Indian art market has witnessed remarkable expansion, establishing itself as a prominent and vibrant player in the global art market. According to a report by ArtTactic, the Indian art market was valued at approximately \$1.6 billion in 2019 and is projected to grow to \$2.2 billion by 2024. The expansion might be ascribed to various crucial elements, including the increasing prosperity of the middle class, the growing recognition of Indian art on a global scale, and the development of the Indian economy.

Artprice's analysis reveals that the Indian art market has witnessed substantial expansion in recent months, as its annual auction turnover in 2018 surged by 29% compared to the preceding year (Artprice, 2018). The growth rate of this country surpassed that of all other Asian countries, with the exception of South Korea.

According to Artprice's 2018 report, the Indian art market witnessed the sale of over 1,400 artworks, with a low unsold rate of only 7%. This suggests that there is still unfulfilled domestic demand for Indian art. The unmet demand in this case stands in stark contrast to the global average rate of unsold goods, which exceeds 30%.

In spite of this strong demand, India ranked 12th in the world's art market in 2018 with an annual turnover from fine art auctions of \$72.5 million, behind Australia (Artprice, 2018). However, the increasing interest of international collectors in Indian art and the growing demand for the works of renowned Indian artists could potentially boost India's position in the global art market in the coming years.

The increasing number of Indian art collectors is one of the main forces propelling the Indian art industry. As the middle class in India has expanded quickly over the past several years, so too has the number of art collectors in the country. As a result, there has been a rise in demand for Indian art, which has pushed up prices and made it a more desirable investment for many people.

Another factor that has contributed to the growth of the Indian art market is the increasing recognition of Indian art on a global scale. Indian artists, such as Raza, Husain, and Souza, are now widely known and respected in the international art community, and their works regularly fetch high prices at auctions. This recognition has helped to raise the profile of Indian art and increase demand for it, both domestically and internationally.

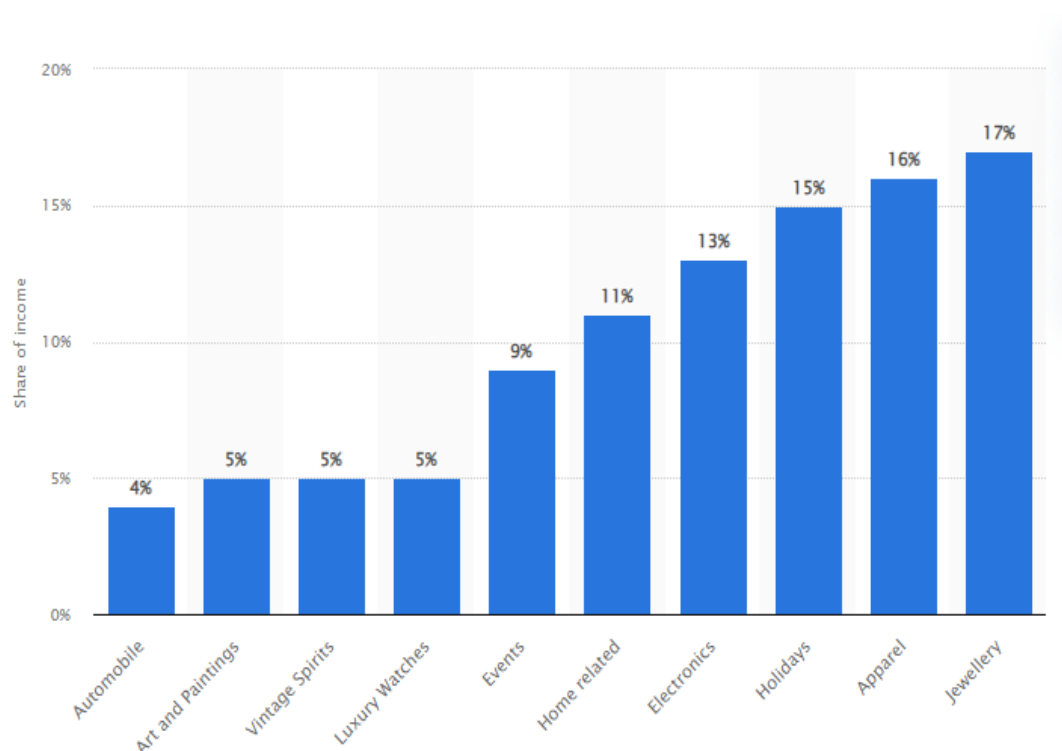
The development of the Indian economy has also been a significant factor in the growth of the Indian art market. As the Indian economy has grown, so too has the number of wealthy individuals and corporations that are interested in investing in art. This has increased demand for Indian art and made it a more attractive option for investors.

Despite these positive trends, there are also a number of challenges that the Indian art market faces. Transparency in the market remains a significant challenge. The absence of transparent and uniform pricing practices in the Indian art market can be a challenge for both buyers and sellers in ascertaining the actual worth of an artwork. Additionally,

the lack of regulation in the market poses challenges for investors seeking to safeguard their interests, and there have been cases of fraud and forgery in the past.

Another challenge facing the Indian art market is the lack of infrastructure and support for artists. While there has been a growing number of galleries and museums in India in recent years, there is still a shortage of support and resources available to artists, which can make it difficult for them to develop their careers and reach their full potential.

Notwithstanding these obstacles, the prospects for the Indian art market are promising. As the Indian economy continues to grow and the middle class continues to expand, demand for Indian art is likely to continue to rise, making it an appealing choice for collectors and investors alike. Additionally, as the Indian art market matures, it is likely that more regulation and infrastructure will be put in place, which will help to increase transparency and protect the interests of investors.



Source: Kotak Mahindra Bank. (August 19, 2020).

Figure 1.5: Share of Indian Ultra-high Net Worth Individuals (HNI) Spending in 2021, by Area

1.5.2.1 The Indian Art Markets Structure

The Indian art market is composed of a variety of stakeholders, including artists, galleries, auction houses, art collectors, investors, and government institutions.

1.5.2.1.1 Artists

Artists are the creators of the artworks and are considered the primary stakeholders of the Indian art market. They are responsible for producing the artworks that are sold and exhibited in galleries and at auctions.

There are many notable Indian artists who have made significant contributions to the Indian art scene. According to recent reports, the demand for Modern and Contemporary Indian art is no longer confined to the country's domestic market; it has become a global phenomenon with collectors from around the world showing great interest in the works of renowned artists like Sayed Haider Raza, Maqbool Fida Husain, and Francis Newton Souza (Kaur, 2021). In addition to London and New York, there is a growing demand for Indian art in Hong Kong and the United Arab Emirates (BBC News, 2021).

The international market's backing enabled nine Indian artists to join the list of the world's top 500 artists rated by auction revenue in 2018 (Artprice, 2018). The top three Indian artists in this list are Sayed Haider Raza, Tyeb Mehta, and Maqbool Fida Husain, with a combined total of \$43.9 million (Artprice, 2018). Raza's artwork alone fetched over \$4.4 million in 2018, making him one of the most valuable Indian artists in the global market (Artprice, 2018).

Other prominent names in the Indian art scene include Anish Kapoor, Akbar Padamsee, Manjit Bawa, Ram Kumar, Francis Newton Souza, and Vasudeo S. Gaitonde (Artprice, 2018). Their works have also been highly sought after in the international art market, and their auction turnovers have contributed significantly to the growing demand for Indian art globally. Here are a few examples of well-known Indian artists with brief information:

M.F. Husain (1915-2011): The most renowned famous Indian artists of the 20th century, Husain was known for his bold and colorful depictions of Indian life and mythology. He is considered one of the founders of the Indian modern art movement and was awarded the Padma Shree, Padma Bhushan, and Padma Vibhushan, India's highest civilian awards.

S.H. Raza (1922-2016): Raza was a prominent Indian painter and member of the Progressive Artists Group. He was known for his abstract and symbolic paintings, which were heavily influenced by Indian philosophy and spiritualism. He was awarded the Padma Shree, Padma Bhushan, Padma Vibhushan, and the highest French civilian award, the Legion of Honour.

Tyeb Mehta (1925-2009): Mehta was a leading member of the Progressive Artists Group and was known for his powerful and emotive paintings. He was deeply influenced by Indian mythology and social issues, and his work dealt with themes of alienation, displacement, and violence. He was awarded the Padma Bhushan, India's third-highest civilian award.

F.N. Souza (1924-2002): Souza was an Indian painter and founder of the Progressive Artists Group. He was known for his bold, expressionistic style and his depictions of the human form. He received the prestigious Padma Shree, one of India's highest civilian honours.

Rameshwar Broota (b.1941): Rameshwar Broota is a Indian painter and sculptor. He is known for his figurative painting and sculptures. He has explored the human form and its relationship to the environment in his work. He was awarded Padma Shree, India's fourth highest civilian award.

These are just a few examples of the many Indian artists who have made significant contributions to the Indian art scene.

1.5.2.1.2 Art Galleries

Galleries are the primary venues for showcasing and selling artworks, and they play an important role in promoting artists and their works. They represent artists, take care of the artworks, promote them, and facilitate sales.

The history of Indian art galleries can be traced back to the late 19th and early 20th centuries when British colonial officials and wealthy Indian merchants began collecting and displaying Indian art. However, it wasn't until the post-independence era that Indian art galleries began to establish themselves as major players in the Indian art scene.

In 1954, New Delhi's National Gallery of Modern Art (NGMA) opened as one of the earliest art galleries in India. The National Gallery of Modern Art (NGMA) is among the oldest and most prestigious art galleries in India.

In 1952, Mumbai's Jehangir Art Gallery opened as another pioneering Indian art gallery. When it comes to promoting Indian art and artists, both domestically and abroad, the Jehangir Art Gallery is right up there with the best of them.

Multiple private art galleries emerged in India during the end of the 20th century. These galleries have played a crucial role in attracting global recognition to Indian contemporary artists. The Project 88 Gallery on Mumbai's Chemould Prescott Road, Nature Morte in New Delhi, and other similar establishments are among the best private art galleries in India.

New Delhi, Mumbai, and Bengaluru, three of India's most populous cities, have all seen the opening of several art galleries in recent years. These exhibition spaces have been instrumental in establishing India as a prominent participant in the international art market by focusing on the promotion of up-and-coming Indian artists.

Based on the findings of the ArtTactic Indian Art Market Report 2021, it is estimated that the Indian art gallery market is valued at around INR 15.2 billion (approximately USD 210 million) (ArtTactic, 2021). The report notes that while the Indian art gallery sector is relatively small, it is an essential component of the country's art ecosystem, providing a platform for Indian artists to showcase their work and engage with collectors and buyers.

The report also notes that the Indian art gallery market has been impacted by the COVID-19 pandemic, with many galleries facing challenges in terms of sales and revenue. However, the report suggests that the market has shown resilience and

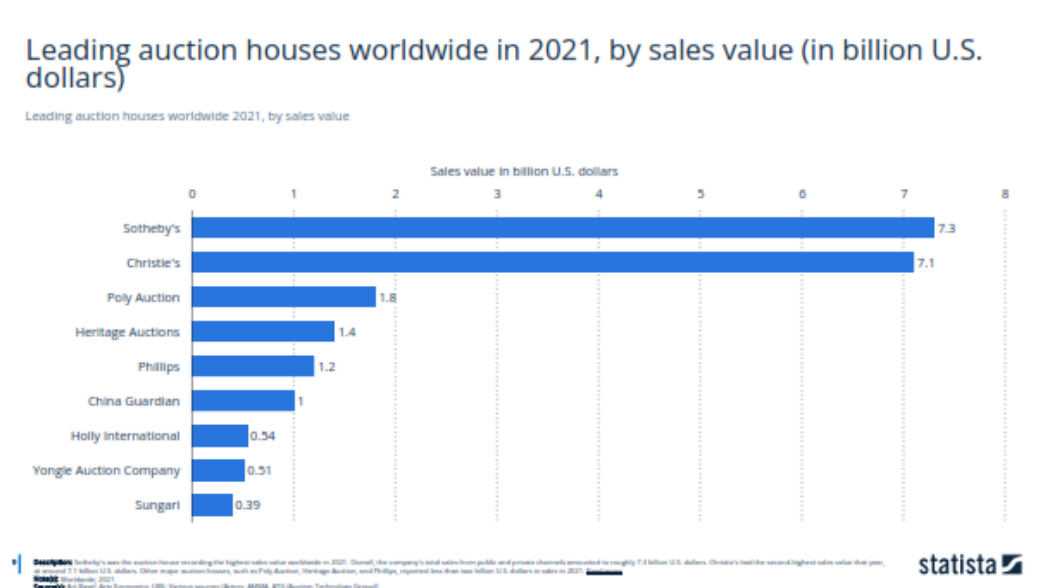
adaptability, with galleries finding new ways to connect with clients through virtual exhibitions and other digital initiatives.

In terms of specific galleries, the report identifies several leading players in the Indian art gallery market, including DAG Modern, which has a strong focus on Indian modern art, and Nature Morte, which specializes in contemporary Indian art (ArtTactic, 2021). Other notable galleries mentioned in the report include Chemould Prescott Road, Vadehra Art Gallery, and Emami Art.

Overall, Indian art galleries have played an important role in promoting Indian art and artists both within the country and internationally. They have helped to establish India as a major player in the global art scene and have helped to promote Indian art as a valuable cultural and economic asset.

1.5.2.1.3 Auction Houses

Art auction houses like Saffronart, Christie's India, and Osian's Connoisseurs of Art have a significant impact on the valuation of artworks and the smooth execution of sales. They conduct auctions of artworks and provide a platform for buyers and sellers to transact.



Source: Art Basel; UBS; Arts Economics

Figure 1.6: Leading Auction Houses Worldwide in 2021, by Sales Value

There are several Indian art auction houses, such as Saffronart, Christie's India, and Osian's Connoisseurs of Art. Saffronart has established itself as a prominent player in the online auction industry for Indian art, boasting a successful track record since its inception in 2000. Christie's India is a branch of the international auction house Christie's and conducts auctions of Indian art and antiques in Mumbai. Osian's Connoisseurs of Art is another Indian auction house that specializes in Indian and Southeast Asian art.

The history of Indian art auction houses dates back to the early 20th century, when British colonial officials and wealthy Indian merchants began collecting and trading Indian art. However, it wasn't until the late 20th century that Indian art auction houses began to establish themselves as major players in the international art market.

One of the first Indian art auction houses was Osian's Connoisseurs of Art, founded in 2000 by Neville Tuli. The company specializes in Indian and Southeast Asian art, and has held several high-profile auctions of Indian art, including the sale of the world's most expensive Indian painting at the time, "Untitled" by FN Souza, which sold for over \$2.5 million in 2008.

Saffronart is another leading Indian art auction house that was established in 2000. It is one of the first Indian companies to conduct online auctions and has since become one of the largest and most respected Indian art auction houses, with sales totaling over \$120 million.

Christie's India, a branch of the international auction house Christie's, began conducting auctions of Indian art and antiques in Mumbai in 1995. The company has since established itself as a major player in the Indian art market and has held several high-profile auctions, including the "Boundless: India" sale in 2019, which set records for Indian modern and contemporary art.

According to the ArtTactic Indian Art Market Report 2021, the Indian art auction market size was projected to be INR 7.1 billion (approximately USD 97 million) in 2020 (ArtTactic, 2021). The report notes that this represents a decline of 18% from the previous year, reflecting the impact of the COVID-19 pandemic on the Indian art market.

Despite the challenges posed by the pandemic, the report suggests that the Indian art auction market has shown resilience and adaptability, with auction houses leveraging technology to reach a wider audience and facilitate online bidding.

In terms of specific auction houses, the report identifies various important individuals in the Indian art auction market, including Saffronart, which has a dominant market share in India and is also a leading online auction platform for Indian art globally (ArtTactic, 2021). Other notable auction houses mentioned in the report include AstaGuru, Pundole's, and Osian's.

In recent years, many Indian art auction houses have emerged to focus on the domestic art market. These houses have focused on the modern and contemporary art within India, which has been rapidly growing in popularity. They have also been successful in creating a platform for emerging artists and promoting the Indian art globally.

Overall, Indian art auction houses have significantly contributed to the promotion of Indian art on a global scale and have been instrumental in positioning India as a prominent participant in the international art market.

1.5.2.1.4 Art Collectors

Art collectors are individuals or institutions that purchase artworks for personal or institutional collections. They play an important role in shaping the Indian art market by driving demand for certain artists and artworks.

According to the ArtTactic Indian Art Market Report 2021, the Indian art market is driven by both domestic and international collectors, with strong demand for Modern and Contemporary Indian art from collectors in cities such as Mumbai, Delhi, Bangalore, and Kolkata, as well as international art hubs like London, New York, and Hong Kong (ArtTactic, 2021).

The report notes that Indian collectors continue to be the primary buyers of Indian art, with the domestic market accounting for around 78% of total sales in 2020. However, the international market also plays a significant role, with sales to international buyers increasing by 3% compared to the previous year (ArtTactic, 2021).

In addition to individual collectors, there are also several prominent corporate collectors in India, including the Tata Group and the Kiran Nadar Museum of Art (KNMA), which is one of the largest private museums in India (ArtTactic, 2021).

In general, it is challenging to pinpoint the precise market size of Indian art collectors. However, it is evident that the Indian art market is backed by a varied and expanding community of collectors, both within India and globally.

1.5.2.1.5 Investors

Investors purchase artworks as a form of investment, buying artworks with the expectation that they will appreciate in value over time. They exert significant influence on the Indian art industry by stimulating demand for specific artists and artworks.

According to a report by the Indian Angel Network, Indian art has historically provided strong returns, with some estimates suggesting that the Indian art market has returned an average of 15-20% per year over the last decade (Indian Angel Network, 2018).

Indian art may be a good choice for investors seeking diversification because it is uncorrelated with traditional asset classes like stocks and real estate, according to a recent analysis (Indian Angel Network, 2018). Other reports have also noted the potential for the Indian art market to offer diversification benefits to investors. According to the ArtTactic Indian Art Market Report 2021, Indian art has become increasingly attractive to global investors seeking exposure to emerging market art, with strong demand for Indian art in international markets such as London and New York (ArtTactic, 2021).

While data on investors who buy Indian art solely for the purpose of diversifying their investment portfolios is limited, it is evident that the Indian art market has the potential to offer attractive returns and diversification benefits to investors.

1.5.2.1.6 Government Institutions

Government institutions, such as the Ministry of Culture, the National Museum, and the National Gallery of Modern Art, play an important role in promoting and preserving Indian art and culture. They provide funding for artists, exhibitions, and other cultural events.

Lalit Kala Akademi: The Lalit Kala Akademi, established in 1954, is the premier institution in India dedicated to the promotion and development of fine arts at a national level. It fosters and stimulates visual arts study and research, as well as organizing exhibits, cultural exchange programs, and seminars. Its headquarters are in New Delhi, while regional offices are located in Chennai, Kolkata, Lucknow, and Bhubaneswar.

National Gallery of Modern Art (NGMA): The establishment of the National Gallery of Modern Art (NGMA) took place in 1954, with its headquarters located in New Delhi. The establishment houses an extensive assortment of contemporary and current Indian artwork, alongside hosting exhibitions, seminars, and lectures. NGMA has branches located in Mumbai and Bengaluru.

Indira Gandhi National Centre for the Arts (IGNCA): The Indira Gandhi National Centre for the Arts (IGNCA) was founded in 1987 in New Delhi. Its goal is to promote India's rich cultural history, which includes visual and performing arts, literature, and other types of knowledge. Exhibitions, conferences, and cultural events are also organized by IGNCA

1.5.2.2 Art Market Segmentation by Type of Art

The Indian art market can be segmented by type of art, which includes traditional, modern, and contemporary art.

1.5.2.2.1 Traditional Indian Art

It refers to art forms that have been practiced for centuries, such as miniature paintings, Tanjore paintings, Madhubani paintings, and Pattachitra. These art forms are often associated with religious or cultural themes and are typically created using traditional techniques and materials.

1.5.2.2.2 Modern Indian Art

It emerged during the colonial period, as Indian artists began to experiment with new styles and techniques, often drawing inspiration from European art movements such as Impressionism and Cubism. Some of the most notable modern Indian artists include Amrita Sher-Gil, Rabindranath Tagore, and Nandalal Bose.

Modern Art refers to the period of artistic production roughly between the 1860s and 1970s. It encompasses a wide range of styles and movements, such as Impressionism, Post-Impressionism, Fauvism, Cubism, Surrealism, Abstract Expressionism, and Pop Art. Modern art sought to break away from traditional forms and conventions, and often aimed to challenge the viewer's perception of reality.

1.5.2.2.3 Contemporary Indian Art

It encompasses a wide range of styles and media, from painting and sculpture to installation and performance art. Many contemporary Indian artists explore issues related to identity, globalization, and the impact of technology on society. Some of the most prominent contemporary Indian artists include Subodh Gupta, Bharti Kher, and Jitish Kallat.

Contemporary art, on the other hand, is art created in the present day. It includes a diverse spectrum of styles and movements such as Neo-Expressionism, Minimalism, Conceptual Art, Installation Art, and Video Art. Contemporary art continues to push the boundaries of what art can be and often engages with current social, political, and cultural issues.

While contemporary art is art produced in the present day, modern art refers to art produced between the 1860s and 1970s.

According to a report by Artery India, traditional art forms account for a significant portion of the Indian art market, with buyers primarily coming from India and other South Asian countries. Modern and contemporary art, on the other hand, tend to attract a more international audience, with buyers coming from Europe, North America, and East Asia. The research also mentions an increasing interest in contemporary Indian art among younger collectors, who are more likely to be drawn to contemporary artists' new techniques and conceptions. However, traditional Indian art continues to hold a significant place in the market, and there is a growing interest in preserving and promoting these art forms.

Overall, the Indian art market is diverse and dynamic, with a range of art forms and styles to suit the tastes of different buyers. The market is driven by a mix of domestic and international demand, with different types of art appealing to different audiences.

1.5.2.3 Performance of Indian Artists in the Art Market

The Indian art market has experienced remarkable growth in recent years and has seen a rise in the demand for works by Indian artists. Here is a detailed essay on the performance of Indian artists in the art market, with data and references:

The Indian art market has been continuously expanding over the years, owing to increased interest in modern and contemporary art, as well as traditional Indian styles. According to an Economic Times study, the Indian art industry is expected to be valued roughly INR 7,000 crore (around USD 1 billion) in 2020. This expansion may be ascribed to a variety of causes, including an increase in the number of high-net-worth individuals in India, an increase in interest in Indian art and culture, and the emergence of online art sales.

Online sales of art have been on the rise in India, with the pandemic boosting the trend. In 2020, online art sales in India increased by about 30-40%, according to a report by Live mint. This growth can be attributed to the increasing use of technology, as well as the need for social distancing measures, which has made online sales a more attractive option for both buyers and sellers.

The Indian art market has a rich history, with a long tradition of classical Indian art and a growing interest in modern and contemporary art. Some of the most popular Indian artists include MF Husain, Tyeb Mehta, and Francis Newton Souza. These artists are well known for their unique styles and contributions to the Indian art scene, and their works have consistently achieved high prices at auctions.

The leading auction houses in the Indian art market are Sotheby's, Christie's, and local players such as Saffronart, Pundole's, Osian's and Artbull. These auction houses regularly host events and sales, showcasing works by both established and emerging Indian artists. The major art events in India include the India Art Fair, the Kala Ghoda Arts Festival, and the Jaipur Literature Festival, which provide a platform for artists to showcase their works and for collectors and investors to discover new talent.

The performance of Indian artists in the art market has been strong in recent years, driven by a growing interest in Indian art and culture, as well as the rise of online art sales. With a rich history and a growing pool of talented artists, it is anticipated that the Indian art market will sustain its growth in the upcoming years.

1.5.2.4 Top Indian Artists based on Sales of Artwork in Art Auctions across the World

Tyeb Mehta: His works have sold for millions of dollars at international auctions. In 2019, his painting “Mahisasura” sold for \$5.5 million at a Christie’s auction in New York (Christie’s, 2019).

Francis Newton Souza: Souza was one of the founding members of the Progressive Artists’ Group, and his works have been highly sought after at international auctions. In 2019, his painting “Birth” sold for \$2.2 million at a Sotheby’s auction in London (Sotheby’s, 2019).

V. S. Gaitonde: Gaitonde’s abstract works are considered some of the best examples of Indian modernism, and his paintings regularly fetch high prices at international auctions. In 2015, his painting “Untitled” sold for \$4.4 million at a Sotheby’s auction in New York (Sotheby’s, 2015).

Amrita Sher-Gil: Sher-Gil was an Indian painter who was active in the 1930s and 1940s. Her works, which often depict the lives of ordinary people, are considered some of the most important examples of modern Indian art. In 2014, her painting “Village Scene” sold for \$1.98 million at a Christie’s auction in New York (Christie’s, 2014).

Raza, S. H.: Raza is a renowned Indian painter who is best known for his abstract works. In 2010, his painting “Saurashtra” sold for \$3.5 million at a Sotheby’s auction in London (Sotheby’s, 2010).

Bhupen Khakhar: Khakhar was a self-taught painter who is best known for his bright and bold works that often address political and social issues. In 2008, his painting “Two Men in Benares” sold for \$1.1 million at a Sotheby’s auction in London (Sotheby’s, 2008).

Akbar Padamsee: Padamsee is a modernist painter who is best known for his abstract works. In 2012, his painting “Grey Weekend” sold for \$3.3 million at a Sotheby’s auction in Mumbai (Sotheby’s, 2012).

Subodh Gupta: Gupta is a contemporary artist who is best known for his works that explore the relationship between India’s rural and urban populations. In 2013, his installation “Every Day is a Good Day” sold for \$2.2 million at a Sotheby’s auction in London (Sotheby’s, 2013).

Jitish Kallat: Kallat is a contemporary artist who is best known for his multimedia works that address political and social issues. In 2018, his painting “The Juxtaposition of These Two Events” sold for \$1.1 million at a Sotheby’s auction in Mumbai (Sotheby’s, 2018).

Atul Dodiya: Dodiya is a contemporary artist who is best known for his works that explore the relationship between Indian and Western art. In 2018, his painting “The Name for the Wall” sold for \$1 million at a Sotheby’s auction in Mumbai (Sotheby’s, 2018).

These artists are considered to be some of the most influential and important artists in the history of Indian art, and their works continue to be in high demand among collectors and institutions worldwide.

1.5.2.5 Indian Art Returns in the Last Ten Years

The Indian art market has seen significant growth in the last decade, and there is a growing interest in the potential for art to play a role as an investment asset class. However, the lack of a well-developed market infrastructure and a consistent regulatory framework has made it difficult to accurately track the returns of the Indian art market.

Despite these obstacles, various research have attempted to examine the returns of the Indian art market during the last decade. According to ArtTactic, a major art market research agency, the average yearly return on investment in Indian contemporary art has been over 10% over the last ten years (ArtTactic, 2017).

Another study by the Indian Art Fair found that the top-performing artists in the Indian art market over the past decade include Subodh Gupta, Bharti Kher, and Jitish Kallat,

who have seen significant growth in the value of their works (Indian Art Fair, 2018). These findings suggest that there is a significant demand for contemporary Indian art, with the potential to generate favourable returns for investors.

It is worth considering that these studies rely on a small amount of data and may not provide a completely accurate representation of the overall performance of the Indian art market. However, they do provide some insight into the potential returns of the Indian art market and suggest that it has the potential to be a promising investment opportunity for investors.

Art has outperformed traditional asset classes, such as stocks and bonds, in recent years. A number of studies have shown that art has delivered strong returns for investors in the past five years.

For example, a study by Deloitte (2018) found that the Fine Art 100 Index that monitors the progress of the most prominent artists on a global scale., delivered a total return of 12.5% in 2017, outperforming traditional financial markets. The study also found that over the past five years, the Fine Art 100 Index has delivered an average annual return of 7.2%, outperforming global equity markets, which returned 5.8% per year on average during the same period.

Similarly, a report by Art Market Research (2021) found that the global art market experienced significant growth in the past five years, with the average annual return on investment in art being 8.9%. This strong performance was driven by the growth of the contemporary art market, which outperformed other segments of the art market.

The Indian art market accounted for 1.4% of worldwide sales in 2020, according to the Art Basel and UBS worldwide Art Market Report 2021, with sales projected at \$84.7 million (Art Basel & UBS, 2021).

The following numbers are presented to offer a thorough perspective on the global sales value of the Indian art market from 2007 to 2021.

In 2007, the Indian art market achieved sales of \$208 million (Art Basel & UBS, 2019).

In 2008, the Indian art market saw a decline in sales to \$50 million due to the global financial crisis (Art Basel & UBS, 2019).

From 2009 to 2011, the Indian art market saw a steady recovery, with sales reaching \$315 million in 2011 (Art Basel & UBS, 2019).

In 2012, the Indian art market experienced a slight dip in sales to \$270 million (Art Basel & UBS, 2019).

From 2013 to 2015, the Indian art market saw moderate growth, with sales reaching \$367 million in 2015 (Art Basel & UBS, 2019).

In 2016, the Indian art market saw a decline in sales to \$223 million, which was attributed to the government's demonetization policy (Art Basel & UBS, 2019).

From 2017 to 2019, the Indian art market experienced a period of recovery, with sales reaching \$249 million in 2019 (Art Basel & UBS, 2021).

In 2020, the Indian art market saw a decline in sales due to the COVID-19 pandemic, with sales estimated at \$84.7 million (Art Basel & UBS, 2021).

In conclusion, the Indian art market has experienced significant development in recent years, despite external factors such as the global financial crisis, government policies, and the COVID-19 pandemic affecting sales figures. Despite these obstacles, it is anticipated that the Indian art market will continue to develop and expand in the future years. In the past five years, art has outperformed traditional asset classes such as equities and bonds, according to the data. By investing in art, investors have increased their portfolio returns and diversification.

1.6 Risks and Opportunities in the Art Market

The art market offers both opportunities and risks to buyers, sellers, and investors. Understanding the potential risks and opportunities can help participants navigate this complex market.

1.6.1 Risks in the Art Market

Market Volatility: The art market is known for its high volatility, which means that art prices can fluctuate greatly over time. This volatility is due in part to the subjective nature of art valuation and the fact that art is not a liquid asset. Changes in the global economy, geopolitical events, and changes in art tastes can all impact the value of the artwork.

Lack of Transparency: The art market is often criticized for its lack of transparency. Prices can be influenced by insider information, dealer markups, and other factors that are not disclosed to buyers. Because of this murkiness, it may be challenging for investors to make well-informed choices.

Counterfeit Art: The art market is also plagued by the issue of counterfeit art. Counterfeit works can be difficult to detect, and the presence of fakes can lower the value of authentic works.

Legal Issues: The art market is subject to legal issues, such as disputes over ownership, authenticity, and copyright infringement. These legal issues can result in expensive lawsuits and damage to the value of the artwork.

1.6.2 Opportunities in the Art Market

Potential for High Returns: The art market has the potential for high returns, with some artworks fetching millions of dollars at auction. In some cases, art has outperformed traditional asset classes such as stocks and bonds.

Diversification: Art can be a useful tool for diversification, as it is a non-correlated asset that can help reduce portfolio risk.

Enjoyment and Cultural Significance: Owning art can bring personal enjoyment and cultural significance, as well as the potential for financial gain. The process of purchasing, studying, and presenting art is frequently enjoyable for collectors and aficionados.

Access to Exclusive Markets: Owning art can provide access to exclusive markets, such as private sales and art fairs. These markets may offer opportunities to acquire highly sought-after works of art that are not available through other channels.

In summary, Chapter 1 provides a comprehensive exploration of the evolving landscape of investments in India, underscoring the strategic significance of portfolio diversification in contemporary financial planning. The chapter contextualizes this evolution within the broader economic trajectory of India—highlighting its rapid GDP growth, expanding middle class, and increasing openness to foreign investment. These dynamics have catalyzed shifts in both institutional and retail investor behaviors, encouraging diversification beyond traditional assets such as stocks, bonds, and real estate. Notably, the chapter introduces modern Indian art as an emerging alternative asset class characterized by aesthetic value, cultural heritage, and increasing financial appeal. Art investments, particularly in Indian contexts, offer unique diversification benefits due to their low correlation with traditional markets, tangible nature, and long-term appreciation potential. However, such investments are also accompanied by risks including market opacity, illiquidity, and valuation subjectivity. The chapter emphasizes that while traditional asset classes remain foundational, the growing relevance of alternative assets—including art—reflects the shifting paradigms of global and domestic investment strategies. By bridging economic analysis with the nuanced dynamics of the art market, this chapter sets the stage for a deeper investigation into Indian art as a legitimate and viable component of a diversified investment portfolio.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

The importance of conducting a review of literature in any research cannot be overstated. A literature review serves multiple purposes that are crucial to the success of any research project. Firstly, a review of literature provides an interpretation of the existing literature on a particular topic, which helps researchers to identify the current state of knowledge and any updated developments in the field (Boote & Beile, 2005). This, in turn, enables researchers to establish consistency in the knowledge and relevancy of the topic under investigation. Secondly, a literature review helps to identify any contradictions between various thoughts regarding the research topic. This is important because it enables researchers to identify areas of disagreement, which can lead to the formulation of new research questions or hypotheses (Rocco & Plakhotnik, 2009). Thirdly, the literature review helps to identify any gaps in the existing literature. This is important because it enables researchers to explore these gaps and make value additions to the concerned field. By identifying research gaps, researchers can also establish a starting point for future research (Tranfield, Denyer, & Smart, 2003). Fourthly, a literature review validates and rationalises the conduct of research in a specified field. This is important because it enables researchers to identify the significance of their research within a particular field and establish the relevance of their research question or hypothesis (Webster & Watson, 2002). In conclusion, a review of the literature is an essential component of any research project. It facilitates the identification of the present state of knowledge and recent advancements in the field by researchers, identifies any contradictions and gaps in the existing literature, and establishes the significance and relevance of their research question or hypothesis.

2.2 Purpose of the Review

The purpose of this literature review is to assess the viability of modern Indian art as an alternative asset class for portfolio diversification. It aims to explore the historical

development of contemporary Indian art, the concept of alternative asset classes, and portfolio diversification, along with existing research on modern Indian art as an investment option.

First, the review will provide a chronological overview of the evolution of modern Indian art, highlighting key artists, movements, and the current state of the market. This historical analysis is essential to understanding the value and potential of this art form as an asset class.

Next, the review will explain alternative asset classes and their role in portfolio diversification. It will explore how assets like modern Indian art can enhance investment portfolios by providing non-traditional diversification benefits, citing relevant studies on the topic.

The focus will then shift specifically to modern Indian art, examining its potential as an investment. The review will analyze existing research on the advantages and risks of investing in modern Indian art, providing a comprehensive assessment of this asset's potential.

Finally, empirical research on modern Indian art as an alternative asset class will be assessed, with attention to methodologies, conclusions, and their implications for investors. This will give a clear understanding of the risks and rewards associated with investing in modern Indian art.

In summary, this review seeks to provide a detailed analysis of modern Indian art's potential as an alternative asset class for portfolio diversification by evaluating its historical context, theoretical concepts, and empirical evidence.

2.3 Overview of the Topic

Art has captivated the public's attention since the dawn of civilization, leading researchers to study the art market in greater detail. While art was initially considered a cultural or leisure-related subject, literature on the art market economics sector contradicts this belief. Investment in art can yield significant returns, as demonstrated by Burton and Jacobsen's (1999) research on the economics of collectibles. The

emergence of artists and artworks as a brand has contributed to commercial exploitation, with individuals feeling a sense of ownership and becoming more likely to be brand advocates. Fillis (2011) notes that art market research has evolved from applied marketing research to a more creative and complex research methodology, utilizing traditional principles.

Alexander and Bowler (2014) state that visual art markets act as a magnet for investors seeking to exploit art for profit, transforming the traditionally skill-dominated art market into a commercial sector. Art-related empirical research has examined numerous areas of funding and assessment, resulting in a rigorous and integrated investigation of art market transactions. According to Bennet et al. (2011), the rise of the Indian economy and financial market has expanded the size of the retail investor population, giving a broad choice of market and investment possibilities that might confuse their decision-making process.

Investing involves a financial commitment with the hope of receiving additional returns or profits, which is essential for achieving personal financial objectives and acting as a safety net for unpredictable financial needs (Kraeussl & Logher, 2010). Many studies have been conducted to investigate the growth and promotion of the art and wine sectors in emerging economies, notably China (Joy and Sherry, 2004; Qiou et al., 2013; Anderson and Wittwer, 2019).

Investors have increasingly turned towards alternative asset classes as they look to broaden their investment portfolios and mitigate their exposure to risk. Real estate, private equity, hedge funds, commodities, and art are among the most popular forms of alternative assets (Chambers et al., 2018). Alternative asset classes have been shown to have low correlations with traditional asset classes such as stocks and bonds, making them a feasible choice for investors seeking to diversify their portfolios (Baltussen, Van Bakkum, & Van der Sluis, 2013).

According to a study by Li, Li, and Liang (2019), investing in alternative asset classes, such as art, has shown a significant improvement in portfolio performance. Art investment has become increasingly popular over the years, and many high-net-worth individuals view art as a viable investment option (Ma, Lu, & Wei, 2020). Art

investment provides investors with the opportunity to hold a tangible asset with unique characteristics and emotional value. Research has shown that investing in art can yield long-term returns, and over the years, art has outperformed other alternative asset classes (Kuo & Lee, 2019).

2.4 Investment

Investment refers to acquiring an asset with the anticipation of generating a future return on that asset (Investopedia, 2022). According to Damodaran (2012), an investment can be classified into different groups based on the type of return it provides, such as income-generating investments, growth investments, and speculative investments. Investments that generate income, like bonds and stocks that pay dividends, offer a consistent stream of income to the investor. Investing in growth-oriented stocks can provide the opportunity for long-term capital appreciation. Investing in speculative assets like cryptocurrencies and commodities can be a risky endeavour. While they have the potential for substantial returns, there is also a significant chance of incurring losses.

The purpose of investment is to generate a return on the capital invested. As stated by Bodie, Kane, and Marcus (2014), the main goal of investing is to generate a financial gain on the capital that has been invested, which serves as compensation for the time value of money, inflation, and the risk involved in the investment. The return on investment can take various forms, including interest, dividends, capital gains, or a combination of these.

Investing can serve different purposes for different individuals and organizations. For individuals, Investment can facilitate the attainment of individuals' financial objectives, such as accumulating funds for retirement, financing their children's education, or acquiring a property. For businesses, investment can help them expand their operations, develop new products, or improve their efficiency and profitability.

Investing can also have broader economic benefits. According to Keynes (1936), investment is one of the key drivers of economic growth and job creation. By investing

in productive assets, such as factories, machines, and infrastructure, businesses can increase their productivity and output, leading to higher employment and incomes.

Various types of investments can be categorised according to the return they generate: speculative investments, growth investments, and income-generating investments.

2.4.1 Purpose of Investment

These days, a person can make money in one of two ways. Making money, either independently or by working for someone else, is the first order of business. The other way to increase your wealth is to invest it so that it grows over time. The point of investing is to generate income, and this can be done through any number of vehicles, including stocks, bonds, mutual funds, options, futures, precious metals, real estate, small enterprises, or any combination thereof. Increasing investment value, dividend income, the sale of a company, or some other source of liquidity can all accomplish this.

To accumulate riches, investor must invest your money. Investor will miss out on possibilities to raise his financial worth if he does not invest. Needless to say, investing carries the possibility of experiencing a loss, but also the opportunity for achieving a gain is greater if you invest intelligently. If you do not invest, your money's purchasing power will degrade over time.

Various kinds of income can be created by investment, including financial profit, interest profits, and appreciation of assets. Trading and speculating are far more short-term in nature, thus investing encompasses a longer-term commitment and carries with it a greater amount of risk. It is crucial to be intelligent about investing if you want to build money. One never knows if one's investment will fall in value or fail altogether. Before investing your money, be sure to complete due research on the firm and perform risk analysis.

2.5 Portfolio Management

A lower-risk portfolio with the same expected return is preferred by investors, according to Harry Markowitz's modern portfolio theory (MPT), which was developed in 1952. Markowitz (1952) found that investors will only put money into a riskier

portfolio if they expect a higher return. If a portfolio is not on the efficient frontier, then it cannot be considered optimal. The most efficient frontier, according to modern portfolio theory, is the one that maximizes return while minimizing risk. Every investment strategy that doesn't make it to the efficient frontier is undesirable since it offers little return relative to the amount of risk. Markowitz (1959) describes formalisation. Diversification is an accepted technique for reducing risk, however diversification should be applied with caution so that asset returns do not influence each other. (Markowitz,1952). In order to decrease investment risk and have a greater risk-adjusted return, investors should diversify their portfolios (Palmliden, 2012). A portfolio of investments is a large collection of various financial assets. Investors who see a risk-reward ratio can follow their strategies via the investor's portfolio. Every investment asset in the portfolio contributes to the overall risk and return, which in turn determines its placement. To invest successfully, investors should avoid or minimise systematic risks and diversify adequately (Markowitz, 1952).

The global financial crisis of 2008 demonstrated the interconnected nature of international markets, showing how a single occurrence may trigger a chain reaction with far-reaching consequences for the global economy. The crisis taught us that not diversifying across asset classes was a major cause of insufficient risk protection (Fraser-Sampson, 2011).

Furthermore, conventional asset classes have underperformed, discouraging investors, prompting them to seek alternatives. Real estate and private equity are two examples of alternative asset classes that exhibit a distinct lack of correlation with conventional investments like stocks and bonds, making them useful for risk management. Investments in real estate, commodities futures, private equity, and hedge funds, among other "alternative assets," have been increasingly popular recently. Before investing in emerging alternative asset classes, investors must be informed of their risk and return (Pownall, 2007). The shifting economy has reduced the appeal of stocks, mutual funds, and bonds. As traditional assets lose value, investors who are familiar with the new asset class are more likely to gravitate toward it. Purchasing alternative assets such as wine, stamps, and vintage autos, as well as more modern items like as rising firms and wind and solar energy sources (Bromma, 2009).

Investing in alternative assets such as wine, vintage cars, and private equity differs from traditional investments like stocks and bonds in that these alternative assets are not publicly traded. Investing in alternative assets requires all or portion of the research and analysis to be conducted, making the process more hands-on (Masset & Weisskopf, 2016).

Portfolio management has been referred to as an art rather than a science. Portfolio management, in fact, refers to the accumulation of financial instruments. (Berry Ken Faulken, 2015), Portfolio management is the best investing technique for an individual based on their budget, age, and risk tolerance. Individuals can use Modern Portfolio Theory (MPT) to optimise their projected rate of return in respect to market risk. The Theory suggests that it is possible to construct a "efficient frontier" of optimal portfolios that offer the greatest potential return for a specific level of risk. In his article "Portfolio Selection," Harry Markowitz established the Theory of Portfolio Management. Portfolio management is the process through which an individual or a corporation acquires securities and invests in financial assets. Individual decisions and preferences have resulted in these convictions.

2.5.1 Risk-return Trade-off

When individuals consider making investments in financial assets such as stocks, bonds, real estate, or any other financial assets, two fundamental factors invariably come into play: risk and return. In this context, risk pertains to the likelihood of incurring financial losses on an investment. It is crucial to recognise that no investment comes without risk. The term "return" denotes the realized profit or loss stemming from an investment, with a negative return signifying a deficit despite the common association of "return" with profitability (Dimson & Spaenjers, 2014). This intricate interplay between risk and potential gain is encapsulated within the framework of the risk-reward tradeoff (Spaenjers, 2010).

The trade-off theory is simple: higher-risk investments have a larger chance of higher returns, while lower-risk ones have a higher chance of lower returns. Because young investors have a higher risk tolerance, their portfolios should contain a higher proportion of stocks. Seniors approaching retirement age should avoid investing in

stock and instead focus on fixed-income instruments such as bonds, debentures, and government securities, which provide a consistent stream of cash payments while posing the least risk.

2.5.2 Portfolio Diversification

If the ideal portfolio consists of n distinct securities, which of the available equities should be part of the investment plan? Is it possible for an investor to apply a simple formula to identify which securities are most likely to be included in his eventual portfolio?

Diversification of a portfolio consists of allocating capital across an assortment of asset classes and securities strategy to reduce the risk profile of a portfolio. The principal objective of portfolio diversification is to reduce asset risk, specifically unsystematic risk. Having a diverse portfolio is essential for effectively managing risk and making wise investment decisions. Diversification provides a number of advantages. However, it must be done with prudence (Berry Ken Faulken, 2015).

In recent years, the advantages of diversification have diminished, prompting a haste to create novel investment vehicles that may improve returns while reducing risk. The utilisation of up-to-date information has enabled the development of an annual art index dating back to 1875, in addition to providing investors with the chance to consider art as an alternative asset class. Moses and Mei (2002). Art indexes are volatile, but they do not exceed the stock market in terms of gains. At first glance, painting looks to be a high-risk investment strategy. This post will look at the benefits of investing in art. It is a very favorable investment vehicle for an investor's portfolio due to its unusually low (and even negative) connection with other asset classes.

2.5.3 The Art of Diversifying a Financial Portfolio Using Art

Hans Hoffman famously described art one hundred years ago as “a world in itself, reflecting the senses and emotions of the artist's world” (Hoffman, 1914, p. 14). However, recent developments in the art world have transformed art from a cultural and aesthetic object to a good with significant economic value. This changing character of

art has attracted investors worldwide to diversify their investment portfolios (Huang & Ritter, 2009).

Art has become a distinct asset class due to rising demand, restricted supply, and the capacity to withstand economic downturns (Capelle-Blancard & Lepetit, 2012). As a result, investors analyze art investments in the same manner they do other asset classes like bullions, bonds, shares, mutual funds, or real estate (Baumol & Bowen, 1966; Mei & Moses, 2002).

The art market's operations have evolved into a stock/bond market, portfolio development, and a group of competent art investors (Moses & Kallberg, 2009). Art investing has become a component of popular investment portfolios as it has acquired recognized as an asset class in its own right.

Investing in art has traditionally not been considered a mainstream asset class due to the relative opacity and illiquidity of the art market. Because artwork is diverse and trading is uncommon, transaction costs and price fluctuation are significant. However, there is a current trend toward art investment funds, which may be a good option for investing techniques. The categorization of Indian art as an asset class and its influence on portfolio diversification are investigated in this study.

Art is a form of human expression with intrinsic and monetary worth because of its historical significance and innovative ideas. Art investments are increasingly evaluated in the same way as regular asset classes, with artists functioning as brands. During recent economic downturns, fine art has done well, with auction houses reporting record prices. The art price index, which is generated using the average price approach, is an important indication of the entire price level of the art market (Chang, 2013).

Asset allocation entails constructing a portfolio in accordance with the saying "don't put all your eggs in one basket." Investors distributed their cash over many holdings with an aim to decrease risk while attempting to get a greater total return within their risk tolerance. Including artwork in an investment portfolio can offer diversification advantages and minimise hazards, resulting in increased total returns (Chang, 2013).

While art investment presents investors with prospects for development and diversification, it is important to do proper research before investing. Creating greater awareness among prospective investors is critical to giving art investment a real push in India. Although art as an investment vehicle is in its infancy, but with proper understanding and allocation, it can provide significant benefits to investors.

2.6 Alternate Asset Class and Portfolio Diversification

Portfolio diversification is a fundamental concept in investment. It entails allocating funds among diverse asset classes to mitigate risks and optimise returns. Traditionally, equities and bonds have been the go-to asset classes for portfolio diversification. However, with the changing economic and financial environment, there has been a shift towards alternative asset classes such as real estate, private equity, hedge funds, commodities, and art.

Alternate asset classes have become increasingly popular as they offer higher returns and provide diversification benefits. Moreover, with the growth of technology and globalization, investors have more opportunities to invest in these asset classes.

2.6.1 Alternate Asset Class

Alternative investments are a broad category that comprises a wide range of assets with no one, overarching definition. These investments include hedge funds, private equity, real assets, and structured products (Chambers et al., 2020). Furthermore, alternative investments include initial public offerings (IPOs), venture capital, artwork, and cryptocurrencies. Alternative asset classes fueled the creation of contemporary portfolio theory, which has been extensively utilised in the financial realm since the 1950s. Chambers and colleagues (2020). The diversification given by alternative investments may help the formulation and evaluation of investment portfolios (Daskalaki et al., 2017; Boal and Wiederhold, 2021). Portfolio managers must pay special attention to illiquid assets such as private equity and real estate when constructing a portfolio since these assets are difficult to sell fast.

A significant corpus of research has been conducted to investigate alternative investments and the ways in which they compare to other types of financial assets.

Literature evaluations are beneficial because they provide light on potential future study areas and increase overall subject understanding (Fisch and Block, 2018). The goal of this activity is to conduct a literature assessment and consolidation on alternative investment research, as well as to identify research needs in this field.

There is no one, all-encompassing definition of "alternative investments," as the term encompasses a wide range of assets. For instance, structured products, real assets, private equity, and hedge funds all fall under this category (Chambers et al., 2020). Additional examples of alternative investments include initial public offerings (IPOs), venture capital, artwork, and cryptocurrencies. Modern portfolio theory, widely used in the financial industry since the 1950s, had its genesis in the advent of alternative asset classes. As stated by (Chambers et al., 2020). It has been suggested that alternative investments might add a welcome element of variety to the process of creating and evaluating investment portfolios (Daskalaki et al., 2017; Boal and Wiederhold, 2021). Portfolio managers need to pay special attention to illiquid assets like private equity and real estate when constructing a portfolio because of their limited liquidity.

Research has been done in a wide variety of alternative investing settings, not just hedge funds and private equity. Researchers such as Kuethe et al. (2014), Delfim & Hoesli (2019), and Lin & Lin, (2011) have all studied real estate. Scholars such as Worthington and Higgs (2008), Bhatt (2013), Ghosh and Mehta (2017), and Palanca-Tan and Santiago (2018) have investigated art as an investment. Dimson and Spaenjers (2011), Charlin and Cifuentes (2017), and Kleine et al. (2020) all conducted research on the topic of collectibles. Researchers such as Daskalaki et al. (2017), Delfim & Hoesli (2019), and Boal & Wiederhold (2021) have all delved into the world of commodities.

Highlighting the growing academic fascination with alternative investments in emerging markets, Cumming and Zhang (2016) utilized bibliometric analysis to document this trend. The mentioned studies collectively provide valuable insights into the ever-evolving landscape of alternative investments and their interplay with traditional financial instruments.

The significance of art as an investment avenue and its use as a risk-mitigation strategy for investment portfolios have been explored in prior literature. Various studies have been

conducted to investigate the investment returns of art and its comparative performance. Additionally, these studies also discuss the most recent developments in the art market, including the returns art generates over time and the factors that affect the appraisal of artworks. Several studies have been undertaken to formulate a valuation model for works of art, which has highlighted the methodological approaches of interviews, expert opinion, and approaches for determining the value of art (Mandel & Bakhshi, 2014).

However, research on portfolio diversification with modern Indian art is still limited, and there is a need for further exploration of this emerging asset class. This literature review aims to explore the concept of alternative asset classes and portfolio diversification, with a focus on modern Indian art as an emerging alternative asset class. By examining prior research and analyzing its findings, this review aims to provide a comprehensive understanding of the potential benefits of modern Indian art as an alternative investment option and its implications for portfolio diversification.

In this research endeavor, the primary objective is to consolidate and synthesize the findings of previous studies related to alternative investing. By employing theme analysis, the study aims to construct a comprehensive knowledge framework that can serve as a valuable resource for future investigations on alternative investments. The intention is to shed light on the outcomes associated with the incorporation of alternative investments into traditional stock-bond portfolios, presenting evidence of mixed results.

The study recognizes the significance of fostering a deeper understanding of the potential benefits offered by alternative investments and aims to facilitate learning in this area by exploring various types of alternative investment vehicles. Through this exploration, the research endeavors to spark meaningful conversations and discussions regarding the role and impact of alternative investments in investment strategies.

The research also recognises that different people have different ideas on whether or not alternative investments should be included in traditional stock-bond portfolios, as shown in the works of Daskalaki et al. (2017) and Boal & Wiederhold (2021). The research intends to add to the current body of knowledge and inspire additional exploration in the field of alternative investments by examining and combining these

contradictory findings. The ultimate goal is to assist investors and financial professionals in making more informed decisions and optimising their investment portfolios through the provision of valuable information.

2.6.1.1 Different Alternative Asset Class

Alternative asset classes encompass investment opportunities that deviate from the conventional stock or bond markets, including private equity, real estate, hedge funds, commodities, and art (Deli and Varotto, 2015). Investors have shown increasing interest in these assets because they provide the potential for significant returns, diversification advantages, and lower volatility (Hussain and Ur Rehman, 2021).

Institutional and high-net-worth investors are major players in the private equity market. It entails putting money into privately held businesses with the expectation of making a return upon selling them (Serra and Garvey, 2018). Capital appreciation and rental income make real estate investments another popular alternative asset type. Commercial and residential real estate investments, as well as REITs, are among these (Deli and Varotto, 2015).

Hedge funds have become increasingly popular as an alternative asset class in the past few years. The management of these funds is entrusted to private entities who utilise various investment techniques, such as long-short equity, global macro, and event-driven approaches, to generate profits for investors (Agarwal and Naik, 2004).

Commodities, such as gold, oil, and natural gas, are also considered an alternative asset class due to their low correlation with other asset classes and potential for hedging against inflation (Gorton and Rouwenhorst, 2006).

Collectibles are often considered alternative asset classes for investment due to their unique features such as rarity, uniqueness, and cultural significance. Collectibles can include items such as art, antiques, coins, stamps, wine, and classic cars. In recent years, studies have been conducted to analyze the investment potential and risk of collectibles as alternative assets.

One such study by Mei and Moses (2002) analyzed the investment returns and risks of collectibles such as fine art, stamps, and wine compared to traditional assets such as

stocks and bonds. The study found that collectibles had higher returns and lower risks than traditional assets, making them attractive as alternative investments.

Another study by Dimson, Spaenjers, and Wharton (2015) analyzed the performance of different collectibles as investments over time, including art, stamps, coins, and wine. The study found that while collectibles had higher volatility than traditional assets, they also had higher returns over the long term, making them a viable alternative asset class for investment.

Studies have examined the art market and its potential as an investment because art is a highly sought-after collectible. The worldwide art market expanded by 9% in 2018, with sales hitting a new high of \$67.4 billion, as reported by Artprice (2019). Works by living artists had a 15 percent price increase over the previous year, and the research revealed that contemporary art accounted for the majority of purchases.

However, investing in art also poses challenges such as the lack of standardization in valuation, transparency, and liquidity. Due diligence is important in assessing the value and authenticity of art before investing (Kaplan and Rauh, 2013).

Antiques, coins, stamps, and old autos are other attractive investment items. Conover and Jensen (2011) conducted a study on the investment potential of historic vehicles and discovered that they had an average yearly return of 8.4% from 1951 to 2010, beating standard assets such as equities and bonds.

In conclusion, collectibles such as art, antiques, coins, stamps, wine, and classic cars are considered alternative asset classes for investment due to their unique features and potential for high returns. Studies have analyzed the investment potential and risk of collectibles, with many finding them to be attractive alternative investments. However, investing in collectibles also poses challenges such as the lack of standardization in valuation and liquidity.

2.6.1.2 Different Collectibles as an Alternative Asset Class for Investment

Collectibles, tangible assets renowned for their distinctive attributes encompassing aesthetic allure, scarcity, and historical imports, are frequently regarded as alternative investment avenues. A plethora of investigations has been undertaken to scrutinize

diverse collectibles as an alternative asset class for investment, encompassing categories such as art, wine, stamps, vintage automobiles, and numismatic coins. This response offers a comprehensive synopsis of the research conducted within each collectible domain.

Art is perhaps the most extensively researched collectible as an alternative investment option. Research has indicated that art exhibits a weak connection with conventional investment categories which make it an attractive option for portfolio diversification (Kaplan & Rauh, 2013). Moreover, the value of art is influenced by various factors such as artist reputation, rarity, and the quality of the artwork, which makes it complex to predict its returns (Renneboog & Spaenjers, 2013). Cherubini, Mazzoli, and Russo (2015) reviewed the different methods used for art price index construction and art investment. The authors concluded that alternative investments such as art can offer high returns, but they also require specialized knowledge and a significant investment of time and resources.

Wine has also been studied as an alternative investment option. The value of wine is influenced by various factors, such as vintage, producer reputation, and production volume (Masset & Weisskopf, 2016). The wine market has a minimal connection with traditional asset classes, and its performance is often linked to economic conditions, consumer tastes, and production yields (Grossman & Livingston, 2018). Research has shown that investing in wine can offer attractive returns, but it also requires knowledge of the market and a long-term investment horizon (Grossman & Pantalone, 2019).

Stamps are another collectible that has been studied as an alternative investment option. The value of stamps is influenced by various factors, such as rarity, condition, and historical significance (Conover & Jensen, 2011). There is little relationship between the stamp market and more conventional asset types, and its performance is often linked to supply and demand dynamics (Mastronardi, 2013). Research has shown that investing in stamps can offer attractive returns, but it also requires knowledge of the market and a long-term investment horizon (Deloitte, 2017).

Vintage cars have also emerged as an alternative investment option in the past few years. The value of vintage cars is influenced by various factors, such as rarity,

historical significance, and condition (Kaplan & Rauh, 2013). The vintage car market has a weaker connection with traditional asset classes, and its performance is often linked to supply and demand dynamics, economic conditions, and consumer tastes (Knight Frank, 2020). Research has shown that investing in vintage cars can offer attractive returns, but it also requires knowledge of the market and a long-term investment horizon (Mumford & Calverley, 2017).

Coins are another collectible that has been studied as an alternative investment option. The value of coins is influenced by various factors, such as rarity, condition, and historical significance (Moser & Würmseher, 2019). The coin market has a low correlation with conventional asset classes, and its performance is frequently influenced by supply and demand dynamics. (Knight Frank, 2020). Research has shown that investing in coins can offer attractive returns, but it also requires knowledge of the market and a long-term investment horizon (Deloitte, 2017).

Several collectibles, such as art, wine, stamps, vintage cars, and coins, have been studied as alternative investment options. These collectibles offer unique characteristics and have a poor association with traditional asset classes, making them attractive options for portfolio diversification.

2.6.1.2.1 Stamps as an Alternate Investment

Stamps are a form of collectible that have been considered as an alternative asset class for investment. Several researchers have examined the potential of stamps as an investment vehicle and have highlighted both the opportunities and challenges associated with investing in stamps.

A study by Spaenjers and Goetzmann (2015) examined the long-term performance of stamps as an investment and found that stamps outperformed both equities and bonds over the period of 1900 to 2012. The study also noted that stamps exhibited low correlation with traditional asset classes, making them a potentially valuable diversification tool for investors.

However, investing in stamps also poses certain challenges. Investors may find it challenging to determine a stamp's value if grading and valuation practices are not

standardised (Revised International Association of Philatelic Experts, 2014). Moreover, the stamp market exhibits a very low level of liquidity, posing challenges for investors seeking to execute prompt transactions in buying and selling stamps

Despite these challenges, some investors have found success in investing in stamps. A study by the Stanley Gibbons Investment Index found that rare stamps had delivered an annualized return of 10.3% over the period of 2005 to 2015 (Stanley Gibbons, 2015). Another study by Knight Frank found that the value of rare stamps had increased by 255% over the period of 2005 to 2015, outperforming other alternative asset classes such as classic cars and watches (Knight Frank, 2016).

In summary, stamps have been considered as an alternative asset class for investment by many researchers. While stamps have the potential to offer high returns and diversification benefits, they also pose challenges related to standardization and liquidity. Before investing in stamps, investors should thoroughly evaluate these factors, as they would with any alternative investment.

2.6.1.2.2 Wine as an Alternate Investment

Wine is considered as a viable investment choice since it has the capacity to yield substantial profits, has no correlation with conventional asset categories, and offers the opportunity for diversifying one's investment portfolio (Ali et al., 2016). Wine investment involves the purchase of high-quality wines with the aim of holding them for a certain period and selling them at a higher price to realize capital gains (Huang et al., 2018).

Several research were examined to see whether wine may be used as an alternative asset class for investing objectives. While some studies indicate that wine is a viable investment choice due to its low connection with standard asset classes such as equities and bonds, others emphasize the difficulties connected with wine investing. While few studies have explored the performance of wine as an alternative investment. For instance, a study by Kavussanos and Marcoulis (2018) analyzed the performance of wine as an investment asset in comparison to other traditional and alternative assets from 1900 to 2012. The study found that wine investments generated higher returns and lower risk than stocks, bonds, and real estate over the period. Another study by Ali et al.

(2016) examined the investment performance of fine wine in the UK market from 1990 to 2012. The study found that fine wine investment outperformed both the UK stock market and gold during the period, with an average annual return of 10.4%.

Many studies, such as Ali et al. (2016), Huang et al. (2018), and Kavussanos and Marcoulis (2018), provide empirical evidence to support the claim that wine can be a profitable alternative investment asset. For instance, Ali et al. (2016) analyze the investment performance of fine wine over a period of 16 years and find that it delivers positive returns with low volatility. Huang et al. (2018) find that wine has a positive and significant relationship with inflation, suggesting that wine can act as a hedge against inflation. Similarly, Kavussanos and Marcoulis (2018) find that wine prices are driven by supply and demand factors and exhibit strong persistence, implying that wine can be a profitable investment option for long-term investors.

However, several studies contend that investing in wine is difficult owing to the market's lack of transparency and liquidity. Landon and Smith (1998) emphasise the significance of reputation and quality expectations in establishing wine pricing, posing challenges for investors in accurately evaluating the worth of wines. Moreover, Lucey et al. (2013) find that investing in wine requires specialized knowledge and expertise, which may not be easily accessible to the average investor. Due diligence is essential in assessing the value and authenticity of wine before investing (Lecocq and Visser, 2006). Wine investment also poses several challenges, including the lack of standardization in valuation, storage costs, and the risk of spoilage or damage to the wine (Lucey et al., 2013).

In conclusion, the studies reviewed here provide mixed evidence regarding the viability of wine as an alternative investment asset. While some studies provide empirical support for wine as a profitable investment option, others highlight the challenges and risks associated with investing in wine. Therefore, It is imperative for individuals to thoroughly evaluate the potential advantages and disadvantages linked to this category of assets and seek guidance from professionals before to making any investing choices.

In summary, the research indicates that wine can serve as a feasible alternative investment choice for investors who desire diversification and the potential for

substantial returns. Nevertheless, investors must possess a comprehensive understanding of the perils and challenges associated with investing in wine.

2.6.1.2.3 Vintage Cars as an Alternate Investment

Vintage cars are considered an alternative asset class for investment due to their potential for high returns and the unique emotional appeal they hold for collectors and enthusiasts. Various researchers have studied vintage cars as an investment, and their findings provide valuable insights into the market.

One study by Knight Frank (2021) found that the global classic car market had a 6% increase in value in 2020, despite the pandemic. The study also stated that the market has grown at a 5% yearly pace over the previous decade, making antique automobiles an appealing investment option.

Another study by Deloitte (2019) suggested that investors should look for cars with historical significance, rarity, and originality, as they tend to hold their value better than other types of cars. The report also emphasized the importance of investing in cars that are in good condition and have a detailed service history.

According to a survey conducted by Barclay's Wealth Insights (2016), antique vehicles outperformed traditional asset classes such as stocks, bonds, and real estate during the previous decade. According to the analysis, antique automobiles have had an average annual return of 6.5% over the previous ten years, compared to 2.9% for stocks and 1.1% for bonds.

However, investing in antique vehicles has substantial risks, including the possibility of high transaction fees, difficulties finding buyers, and a lack of liquidity (Deloitte, 2019). Furthermore, maintenance expenses can be considerable, and the value of an automobile can be influenced by factors such as the vehicle's condition, provenance, and market demand (Barclay's Wealth Insights, 2016).

In conclusion, vintage cars are a unique and potentially lucrative alternative asset class for investors. Nevertheless, just like any investment, conducting comprehensive research and exercising due diligence are essential in order to minimise risks and maximise rewards.

2.6.1.2.4 Coins as an Alternate Investment

Coins are a popular collectible item, and some types of coins, such as rare or antique coins, can be considered alternative asset classes for investment. Research on the investment potential of coins has focused on their financial returns, diversification benefits, and historical significance.

Cherubini, Mazzoli, and Russo (2015) investigated the diversification benefits of investing in rare coins. They found that rare coins were positively correlated with other tangible assets, such as gold and silver, but were negatively correlated with stocks and bonds, suggesting that investing in rare coins could provide diversification benefits for a portfolio.

Coins also have historical significance, and the value of certain coins can be influenced by historical events. Masset and Weisskopf (2016) studied the relationship between historical events and the value of gold coins from ancient Rome. It was discovered that the worth of these coins was impacted by various factors, such as the political and economic climate of the time, as well as the rarity and quality of the coins.

Grossman and Livingston (2018) studied the value of commemorative coins issued by the U.S. Mint. They found that the value of these coins was influenced by factors such as the popularity of the design, the rarity of the coin, and the number of coins produced.

Coins, like other collectibles, also have the potential to be subject to counterfeiting. Grossman and Pantalone (2019) studied the prevalence of counterfeit coins in the market and found that coins from certain countries, such as China, were more likely to be counterfeited than others.

Coins, particularly rare or antique coins, can be considered alternative asset classes for investment. Research has shown that rare coins can provide financial returns, diversification benefits, and historical significance. However, as with other collectibles, coins can also be subject to counterfeiting, which can negatively impact their value.

2.7 Art as an Alternate Investment

Since the dawn of human civilization, the general public has been fascinated by art. It has not only attracted art buyers but also researchers who are interested in exploring the opaque art market. Initially, it was assumed that art was only relevant to culture and pigment-related studies and had no significant association with economic theories and core finance (Capasso & Talarico, 2016). However, contrary to this assumption, there is a significant amount of literature on art market economics. Through a rigorous analysis of this literature, it is clear that investing in art can offer significant returns, fueled by the intermittent media attention given to art as a lucrative investment option (Renfrew, 2015).

The emergence of artists and artworks as a brand has indeed been driven by commercial exploitation, and this trend has continued to evolve over time. For example, in recent years, artists have been collaborating with fashion brands to produce limited-edition collections, further cementing the relationship between art and branding (Seelig, 2017). Additionally, social media has played a significant role in the branding of artists and artworks. Platforms such as Instagram have provided artists with an opportunity to showcase their work to a global audience, effectively building their brand and expanding their reach (Bourriaud, 2017).

Lafferty, Matulich, and Liu's (2013) research support the idea that art collecting is a form of brand acquisition. However, this concept has also been explored in the context of luxury goods more broadly. For example, Khan and Zaman (2021) found that luxury brand consumers not only perceive luxury goods as status symbols but also as a means of self-expression and personal identity. Therefore, art collecting as a form of brand acquisition may be an extension of this broader trend toward consumer identity construction.

In light of these changes, it is encouraging to see art market research develop into a more nuanced and original study approach. For the art market to be fully understood, it necessitates a more nuanced approach that considers the social and cultural components of art collecting, as noted by Fillis (2011). In this way, art market research may aid in clarifying the connection between consumer identity and the power of branding.

2.7.1 Modern Indian Art as an Alternative Asset Class

2.7.1.1 Definition of Modern Art

Modern art is defined by a break from conventional academic art and a concentration on new modes of expression (Tate, n.d.). Modern art is a diverse set of artistic styles and movements that evolved throughout the late 19th and early 20th century. According to Gardner (2001), modern art is frequently characterized by a spirit that is characterized by a spirit of exploration, creativity, and avant-garde concepts that question the established rules of art.

According to Gardner (2001), the terms "modern art" and "modernist art" are frequently used interchangeably to designate a wide range of aesthetic movements that emerged in the late 19th and early 20th centuries. These movements include, but are not limited to, Fauvism, Expressionism, Cubism, Futurism, and Surrealism, amongst others. These movements share a common interest in breaking away from the conventions of traditional art, such as naturalism, perspective, and classical beauty, and exploring new ways of representing reality through abstraction, distortion, and other forms of experimentation (Gardner, 2001).

Modern art is characterized by a wide range of styles, techniques, and subject matter, reflecting the diversity of the artists and movements involved (Tate, n.d.). Some of the most prominent modern artists include Pablo Picasso, Henri Matisse, Wassily Kandinsky, Jackson Pollock, and Andy Warhol, among many others.

In the Indian context, modern art in India emerged during the late nineteenth and early twentieth century. It marked a shift away from traditional Indian art and embraced new forms of expression (National Museum, n.d.). Modern Indian art is often associated with a spirit of experimentation, innovation, and social and political engagement that challenged the established norms of art and society (National Gallery of Modern Art, n.d.).

According to Zaidi (2016), modern art in India emerged in response to the impact of British colonialism and the encounter with Western art and culture, which led to a re-evaluation of Indian artistic traditions and a search for new forms of expression.

Modern Indian art is characterized by a wide range of styles and techniques, including realism, cubism, expressionism, and abstract art, reflecting the diversity of the artists and movements involved (National Museum, n.d.).

Some of the most prominent modern Indian artists include Rabindranath Tagore, Amrita Sher-Gil, Raja Ravi Varma, and MF Husain, among many others. These artists challenged the traditional notions of Indian art and society through their work, and their legacy continues to inspire contemporary Indian artists and art movements (National Gallery of Modern Art, n.d.).

2.7.1.2 Modern Art as an Investment Tool

Investing is the act of committing financial resources to a project or activity in the hope of receiving an additional return or profit, and it is critical for individuals to achieve their financial goals and provide a safety net for unforeseen financial needs (Kraeussl & Logher, 2010). Recent years have seen an increase in research devoted to the expansion and advancement of art and wine markets in developing economies, specifically the rapid expansion of China's market (Joy & Sherry, 2004; Qiou et al., 2013; Anderson & Wittwer, 2019). These studies have concentrated on China's market since it is the most rapidly expanding market. The growth of art and wine markets in emerging economies has led to increased investment opportunities for individuals seeking to diversify their portfolios, as these markets often offer a unique combination of cultural value and potential financial gain (Gronau & Shachmurove, 2015).

The Indian financial market has indeed experienced remarkable growth since the initiation of economic reforms in 1991, with numerous developments taking place in the sector (Goyal, 2014). A robust financial market is critical to the prosperity of any economy. Bennet et al. (2011) state that the expansion of financial markets on a global scale has significantly increased the number of retail investors. In the last twenty years, there has been an expansion in the availability of a wider variety of market and investment choices.. However, the availability of more options has made the investment decision process more complicated for investors. Furthermore, the increased complexity of financial markets has led to a growing interest in behavioral finance research that focuses on understanding the decision-making process of investors (Kumar & Kumar, 2015).

Investing in art is a practice that has a long and illustrious history. Although there is considerable discussion among academics over the beginnings of financially driven art investments, some believe that the practice acquired significance following World War II (for example, Frey and Pommerehne, 1989). However, the thought that owning a piece of art may result in possible financial gains is not a brand-new one. There is evidence that dates much further back in time that supports this concept. For instance, the Dutch farmers were prepared to pay high prices for paintings because they anticipated big returns upon resale them, as reported by De la Barre et al. (1994). John Evelyn, a diarist who lived in the 17th century, made this observation. People have recognized the potential for financial gains through art ownership and commerce for many years, as demonstrated by this historical example, which underlines the fact that the idea of art as a profitable investment has survived for many centuries.

Art has always been a source of contention, thus an inquiry was conducted to see why a tiny art fund has grown over the last four years and built a favorable reputation. Because of the volatility of the stock market, concerned investors are looking at other assets as prospective investments. The available supply has been restricted as a result of the increased demand for art as an investment (Hsieh et al., 2010). Investing in art is thus more sophisticated than investing in stocks or bonds. Art as a valuable asset is separate. Art is seen as an appealing investment owing to its high yields and low risk.

Art has been increasingly recognized as an alternative investment option in recent years due to its non-correlation with other asset classes, potential for high returns, and aesthetic appeal (Kaplan & Rauh, 2013; Zhang, 2018). According to a study by Kaplan and Rauh (2013), the average annual returns for art investments were 6.5% over the period 1957-2007, and this rate of return was found to be uncorrelated with traditional asset classes such as stocks, bonds, and real estate. Similarly, Zhang (2018) finds that there is no association between art and other asset classes, suggesting that art may offer diversification advantages for investors.

Additionally, art does not change in response to commercial situations. Art does not provide a revenue stream in the form of a dividend. Professional investment managers

construct and run the Art Funds, and experts from the art business provide advisory information alongside professionals from typical hedge and private equity funds. Concern raised most of the time about illiquidity, which is frequently Associated with the challenges that investors have while acquiring and selling art. However, quantifying illiquidity in formal investing research is problematic. The assessment of illiquidity in the securities market is occasionally based on the price discount or bid-ask spread that is necessary for an instant sale. This idea is latent in several studies, including those by Laroque and Grossmand (1988) and Luciano and Dumas (1991).

Art, historically underrated and undervalued as an industry, has seen a surge in awareness in recent years. However, investing in art comes with significant risks, as its value is heavily reliant on public taste, setting it apart from traditional commodities like real estate, stocks, or gold. During 2000-2009, India's art industry experienced a remarkable boom in demand, leading to price escalation and the emergence of Indian art funds. Given the various advantages associated with art investments, collectors often ponder whether art is a wise choice for their portfolio diversification.

Indian art has gradually gained recognition as a thriving asset class. Deloitte Luxemburg reported a 32% increase in Indian modern and contemporary art auction sales, reaching \$49.5 million in 2013 compared to 2002 levels. Moreover, Deloitte research revealed that 76% of art buyers made investments in art and collectibles in 2014, a significant rise from 53% in 2012. Despite these positive trends, some potential Indian investors remain unfamiliar with the potential of art and collectibles as viable investment avenues. Recognizing the cultural significance of art, BMW's CEO emphasized that economic growth should account for the importance of culture in shaping identity.

In the realm of art economics, Don Thompson, an esteemed business professor and art economist, embarked on a study of art's relationship with passion, money, and self-glorification. His influential book, "\$12 Million Stuffed Shark: The Curious Economics of Contemporary Art," delved into the intricate workings of the art market, highlighting its lack of regulation and transparency. Thompson analyzed notable art transactions, such as the exorbitant sums spent on decomposing, stuffed shark carcasses and iconic

paintings like Jackson Pollock's 'No.5 1948,' shedding light on the ever-shifting mindset of newly affluent investors seeking alternative investment avenues.

Through his well-researched work, Thompson explored the determination of artwork value and the factors that contribute to its significance. His analysis showcased the evolving mindset of investors and the changing perception of art as a legitimate and lucrative alternative investment. By dissecting these notable transactions, Thompson provided real-life examples that contextualized the broader trends in the art market.

Overall, the art market's uniqueness lies in its allure, its unregulated nature, and its increasing appeal to a new breed of investors seeking diverse investment opportunities. As art continues to gain recognition as a distinct asset class, researchers and investors alike remain intrigued by its potential impact on portfolio diversification and its role as a valuable addition to the world of alternative investments.

In 2017, a significant art auction at Christie's in New York caught global attention when Italian artist Leonardo da Vinci's masterpiece "Salvator Mundi," measuring 45cm × 66cm, went under the hammer. The astounding price of \$450.3 million (approximately Rs 2,940 crore) set a new record for the most expensive artwork sold at that time, equating to an astonishing Rs 99 lakh per square centimeter. Just four years prior, in 2013, the same artwork had been sold for \$127.5 million (approximately Rs 833 crore), reflecting an impressive Compound Annual Growth Rate (CAGR) of 37%. This exceptional price appreciation outperformed the annual average returns of 12% offered by the BSE Sensex, affirming Don Thompson's observation that the financial landscape has undergone a remarkable transformation.

Social media and other technologies have helped attract art market investors. Increased access to news, price records, and auction-related data through various online platforms has contributed to the growing appeal of alternative art investments. Moreover, the availability of art price index series has further enriched the information available to potential investors. Consequently, many art markets have enthused closer to the norms observed in financial markets, experiencing substantial cross-border transactions primarily through auction houses, as opposed to traditional dealers.

As the art market continues to evolve and embrace modern digital platforms, it presents an intriguing avenue for investors seeking unique opportunities beyond traditional financial instruments. The impressive returns witnessed in the case of “Salvator Mundi” serve as a compelling example of the potential profits that can be achieved through strategic art investments.

In particular, modern Indian art has emerged as a unique and promising alternative asset class in recent years. The expansion of the Indian economy, rising affluence, and the nation's abundant cultural legacy have all fostered the development of the Indian art market. Chandra (2014) note that the Indian art market has experienced significant growth in recent years, with auction sales increasing from INR 1.5 billion in 2003 to INR 20.3 billion in 2013. They suggest that this growth can be attributed to various factors, including rising incomes, the emergence of a new generation of collectors, and the increasing international exposure of Indian artists.

In recent years, there has been a notable growth in the Indian art market due to the country's expanding economy and growing middle-class population, leading to a surge in demand for art (Borooah & Luckstead, 2017). Modern Indian art, in particular, has attracted the attention of both domestic and international investors due to its unique style and cultural significance. According to a report by Artprice (2019), the Indian art market grew by 6% in 2018, with modern Indian art accounting for the majority of the sales. The expansion can be ascribed to numerous factors, including increasing wealth and disposable income, changing demographics, and the emergence of Indian art as an alternative investment option (Zhang, 2018).

Investing in modern Indian art may be challenging due to various factors such as valuation, transparency, and liquidity issues. Chang, D., 2013 highlighted the lack of standardization in valuation and transparency in the Indian art market. The absence of a standardized approach can pose a challenge for investors in evaluating the actual worth of an artwork, thereby complicating investment decisions in the market. Additionally, liquidity can be a significant concern for art investors, as art is generally considered an illiquid asset, meaning it may take time to sell an artwork in the secondary market.

However, due diligence can help mitigate some of these challenges. Kaplan and Rauh (2013) suggested that before investing in artwork, investors should undertake exhaustive due diligence to determine the artwork's value and authenticity. Due diligence can involve researching the artist, the artwork's provenance, and the auction history of similar works. This can help investors better understand the artwork's value and potential investment returns while reducing the risks associated with investing in art.

Artprice's (2019) report showed that modern Indian art is attracting the attention of domestic and international investors, and the Indian art market is growing rapidly. However, investors should still exercise caution and perform due diligence to mitigate the challenges associated with investing in the modern Indian art market.

The distinct properties of art as an alternative asset class, along with the growing potential of the Indian art market, make modern Indian art an appealing option for investors looking to diversify their portfolios while possibly earning considerable profits. The purpose of this research is to confirm the idea, which is backed by several research studies, that investment in art may provide significant advantages and risk diversification. With the recent rise in interest in art as an alternative asset class and the appearance of various organizations offering art investing services, it is an opportune moment to delve into the strengths and limitations of art as a source of financial appreciation.

Moreover, the historical presence of art booms has been emphasized by scholars, particularly those engaged in the cultural economy field. As a result, the extensive literature on art investment will serve as a valuable resource, facilitating a comprehensive understanding not only of art investment itself but also of various interconnected aspects.

This study elucidates the potential benefits and risks inherent in modern Indian art investment. Through a comprehensive investigation encompassing a thorough review of extant research and meticulous analysis, the objective is to offer insights into the role of art within the realm of alternative investments. This study contributes to the existing body of knowledge in this domain, thus facilitating investors to make judicious decisions concerning the incorporation of art into their investment strategies. Given the

mounting interest in art as an asset class, a nuanced understanding of the intricacies surrounding art investment has valuable implications, particularly for individual and institutional investors seeking to augment portfolio diversification and to explore prospective avenues for financial growth.

2.8 Valuation of Art

Although numerous studies have explored the factors influencing art valuation, the topic remains relatively uncharted territory. The complexity of information surrounding art as an asset class has developed traditional market indices. Notably, Mei Moses, two professors from New York University's Stern Business School, established high art indexes to gauge demand and understand market trends. Additionally, other reputable sources such as Art Market Research, Artnet, and Artprice have emerged over time, offering reliable and impartial performance metrics based on factual data from open market transactions. These indexes provide investors with a secure means to monitor the success of their art assets, as long as the indices align with the types of artworks in their portfolios.

Unlike in the stock market, where index performance is commonly acknowledged as a standard, in the real estate market, the art market relies on competent distributors and specialist consultants to promote art investments. The art industry's dynamic nature continuously adds value to the foundation of art market data, making it possible for actively managed art funds to achieve returns surpassing those projected by published indexes. This highlights the lack of transparency and inefficiency in pricing within the art market, presenting a well-advised investor with opportunities for advantageous outcomes (Beckert & Rössel, 2013; Charlin & Cifuentes, 2017; Ibisola et al., 2019).

2.8.1 Price Determinant of art

Because of the limited connection between art and other asset groups. They explore new ways to diversify their portfolios across markets and asset types. The results are consistent, even after accounting for the substantial transaction costs associated with trade arts. The issue of pricing on the art market is derived from a lack of production expenses in art items and for paintings in the respective market. Therefore, there are a

few of questions. Can Marshallian value theory be applied to the specific configuration of the market? Is the usefulness marginal sufficient for the determination of the price of artworks, and hence demand factors? Is it meaningful to distinguish the market price from the innate value of a painting? (Crossland & Smith, 2002).

Auction prices depend mainly on four sets of regressor: the identity of the artist, the physical features of the paintings, the creative features of the auction, the marketplace and the year of sale. A fair prediction of the price of painting seems to be the pre-sale impression, but the idea of its suicide is denied and certain complications occur with regard to the economic interpretation of data. While the physical qualities of the paintings are often the focus of their current literature, a broader range of explicative elements exist. In their model, therefore, the artist's identity, physical capacity, aesthetic and sales aspects of their works are principally specified in four categories of Regressors (Marinelli & Palomba, 2010).

Similar research was conducted by Frey Bruno S. and Werner W. Pommerehne (1989) and it was found that the heterogeneity of works 1 was a monopoly of the owner of their painting, the limits on trading and the lifetime of the various segments of the art market. The key objective is, nevertheless, that literature worries might be identified with price actuality for calculating price indexes. In comparison with other financing assets, evaluating the profitability of investing in art is a necessary and essential step. There have been at least four approaches:

- i) The indexes reflecting experts' opinions (such as the Sotheby's Art Index);
- ii) The clues of repeated sales regressions;
- iii) The indices that reflect their methodology for average paintings using their refined representative painting;
- iv) Hedonic models are to be evaluated in explaining the market price of artworks.

The assessment of an artist's work involves considering various factors, such as the artist's background, materials used, supporting elements, dimensions, and the theme of the painting (Brotto & Busacca, 2018). Furthermore, transaction data analysis includes

information on auction dates, auction houses, markets, auction order, the proportion of artworks sold, and related macroeconomic indicators. The artist's prior market performance at auctions also gives useful information. To establish market prices for standard products, a sample of commodities is analyzed based on their properties and time. Indexes are then developed using calculations of the selling price.

Focusing on commodities sold more than once and estimating fluctuations in the (logarithm of) price of each product using dummy variables for different time periods during which the commodity is retained is a recommended technique for selecting features for assessment. This technique, known as "repeat sales regression," has been used by a number of researchers, including (Palmquist R., 1980), (Mark & Goldberg, 1984), (Case K., 1986), (Case & Shiller, 1987), and (Goetzmann W. N., 1990), most notably in evaluating paintings (Anderson, 1974).

While the repeat sales regression approach avoids the difficulties associated with creating specific quality indicators, it does exclude data from single transactions. The repeated sales estimator is simply a hedonic estimator, with hedonic variables that include commodity dummy variables, each of which represents a separate item. The recurrent sales strategy has been proposed to be improved by including changed attributes and expanding the number of hedonic elements (Palmquist, 1982) and (Case & Quigley, 1991). However, in marketplaces with few transactions, adding all commodities sold just once may provide a competitive edge in the analysis, guaranteeing that such one-of-a-kind transactions are not ignored.

The annual indices are then utilized to discuss whether the return-risk features of their works are favorable in comparison to the classic financial assets, for example, stocks and bonds. The broader data set allows us to test both proposals that art merchants and economists usually offer. The first says that the art investors should buy or buy the most expensive and affordable works, just the excellent works of established artists(masterpieces). The empirical proof of the masterpieces' return performance is ambiguous. There is strong evidence of poor performance (Pesando, 1993, Cinefra, et al. 2019)), but no such evidence was identified (Goetzmann W. N., 1995). Your study

will broaden your analysis with a new hedonic regression testing approach. The second proposal says that prices for the same paintings should be the same at different locations and at the same time. During the comparison of the prices of the alternative copies of the identical printed prints sold in New York at Sotheby's and Christie's they found considerable proofs of a violation of the 1977-1992 "one price law." While no piece of work of art in both auction houses has ever been sold at the same time, they will do a "one-price law" test by studying their return of differential artworks sold in the various auction houses over a considerable length of time. If pricing variances were systematic from an auction house to various auction houses. The return differentials are examined using a separate RSR technique (Pesando,1993). In addition, they should anticipate that the returns for sold artworks will differ systematically.

2.9 Literature Summary & Gaps

2.9.1 Literature Summary

Art markets provide a platform for artists to meet the demand of collectors. Extensive literature has emphasized the economic and financial aspects of the art market, including the microeconomics of art markets, econometric valuation of art, and the computation of art price determinants. Auction data is frequently used due to its availability and accessibility. However, there is a lack of finance-related literature on the primary sector, which consists mainly of museums and art galleries. Few studies have focused on art galleries due to the absence of publicly available information on their art sales, as well as discrepancies between supply and demand. The advent of social media and other digital platforms has increased confidence in purchasing art, reducing the gap between supply and demand. This study aims to analyze the demographics of this shift.

Despite anecdotal evidence that investor behavior significantly impacts investment prices, there is sparse systematic and theoretically propelled research on the association between cultural attributes and art economics. Few studies have investigated art investment behavior as a behavioral domain. This study aims to delve into investor psychology and decision-making objectives.

The second part of the study aims to identify price determinants of artworks in the high-end auction market. International literature is used to identify factors that impact the auction price of art, such as the artist or artwork itself. The determinants are then classified and further investigation is conducted on the supply side to identify the capability of art to perform as a vehicle for diversification for alternate investment. The wealth creation of the stock market has a similar impact on the returns of art investment. With an emphasis on the Indian art market, the research tries to explore the merits and drawbacks of art as a source of both aesthetic pleasure and monetary gain.

2.9.2 Literature Gaps

After conducting a comprehensive review of the literature, this study identifies several gaps that need to be addressed. Firstly, there is a lack of research-based studies or academic publications on the financial performance of the Indian art market, despite the growing interest and rise of news stories and weblogs discussing the topic. This gap in the literature is partly due to the limited availability of information about high-end collectors' primary market trades or auction dealings. Furthermore, the Indian primary art market as a whole is under-researched, leading to a lack of understanding of its dynamics and unique features.

Secondly, most of the existing research on alternative assets and portfolio diversification has been based on data from advanced economies. The few studies that do focus on developing markets are either insufficient or only focused on the fragmented art market. As a result, there is a need to explore the seamless connectivity between arts engagement with changing trends of investing and other financial and societal outcomes, as well as the arts' significant financial and economic contribution.

Thirdly, there are no interconnections among the Indian art market and the financial markets available. This gap in the literature presents an opportunity to explore the potential for the Indian art market to serve as an alternative asset class and its relationship with other financial markets.

Finally, while there has been some research on arts management, art economics, and the cultural industries in India, it is relatively new, and there is still much to be explored.

The limited literature in these areas presents a gap in the understanding of the Indian art market and its potential as an alternative asset class.

To address these gaps, this study will explore the Indian art market as an emerging alternative asset class and its potential for portfolio diversification. The study will critically examine the existing literature on alternative assets, portfolio diversification, and the Indian art market, synthesize empirical evidence and case studies from relevant sources, and assess the role of modern Indian art in diversifying investment portfolios and reducing risks. Furthermore, the study will provide insights into the opportunities and challenges of investing in modern Indian art and may suggest recommendations for improving market efficiency, transparency, and regulatory frameworks to enhance the growth and sustainability of the Indian art market as an alternative asset class.

2.10 Rationale of the Study

The purpose of this academic study is to investigate the potential of modern Indian art as a new alternative asset class for portfolio diversification. Due to the lack of transparency, market inefficiencies, and regulatory frameworks, assessing alternative assets in emerging markets like India is a complex task for investors. Therefore, this literature review aims to provide a comprehensive analysis of the Indian art market, including its unique features, investment potential, and risks.

To achieve its objectives, this study critically examines existing literature on alternative assets, portfolio diversification, and the Indian art market. The synthesis of empirical evidence and case studies from relevant sources, such as academic journals, reports, and books, offers insights into the opportunities and challenges of investing in modern Indian art.

Furthermore, the study assesses the role of modern Indian art in diversifying investment portfolios and reducing risks, particularly in the context of Indian investors. This analysis will aid in understanding the erratic framework and temperaments responsible for the rise in current art values across the world.

The study's findings are intended to add to the current body of knowledge on alternative assets and portfolio management, particularly in the Indian context. It will provide

investors, academics, and policymakers with insights into the opportunities and challenges of investing in modern Indian art and its potential role in diversifying investment portfolios. The study may also suggest recommendations for improving market efficiency, transparency, and regulatory frameworks to enhance the growth and sustainability of the Indian art market as an alternative asset class.

Moreover, this study highlights the enormous development potential in this asset class in a growing economy like India, particularly for long-term wealth building. As a part of Indian culture, art has always been an essential aspect of society, and artists such as M F Hussain, Tyeb Mehta, Ganesh Pyne, FN Souza, and others have gained global recognition, with their works fetching millions of rupees both domestically and internationally.

Despite the allure of big money, the Indian art market remains an unfamiliar region for many nouveau riche (burgeoning upper middle class) due to the infrequent exchange of paintings, which makes finding values challenging. The study explores the price drivers of the secondary art market, the intrinsic link between art and other financial markets, and the potential of portfolio diversification.

In conclusion, the study investigates the Indian art market from an investment standpoint to entice art connoisseurs to become art investors. It also aims to overcome misconceptions and blockages that keep individuals from investing in Indian art and missing out on ideal portfolio diversification.

2.11 Scope of the Study

Currently, the market is experiencing a boom across all sectors, particularly in contemporary art, where a significant number of purchased pieces are consistently appreciating in value. This expansion is being pushed further by the advent of Indian art, which is slowly making its impact on the global arena. The rising markets in China, India, and UAE have contributed to the increasing popularity of art pieces from these regions among both national and international buyers. As wealth accumulates in these global regions, more investors from these areas are actively participating in the art market.

Patriotism also plays a vital role in the expansion of art markets in developing countries. Numerous collectors are motivated to purchase works from their own countries as an act of patriotism and as a means of asserting their cultural identity. This sentiment further strengthens the demand for art from these regions and bolsters the overall growth of the art market.

The combination of booming sectors, such as contemporary art, and the global expansion of the Indian Art market is creating a dynamic and vibrant landscape for art investors and collectors. The increasing interest from investors in emerging markets like China, India, and UAE is further enhancing the international appeal of art from these regions. Additionally, the infusion of patriotism into art collecting in developing countries adds a unique dimension to the market, reflecting the connection between culture, identity, and art investment.

With the market constantly changing and expanding, there are plenty of exciting prospects for both investors and collectors. Art has become not only a means of cultural expression but also a potential source of financial appreciation, attracting a diverse range of buyers and investors from around the world. This intersection of cultural value and financial potential has contributed to the current boom in the art market, fostering a global community of art enthusiasts, investors, and collectors.

By this study it would be helpful for the future scholars and investors to understand the underlying value of art. Art surely can be used as an alternate asset class whose rate of return can be compared with that of return from stock markets. The current credit crunch and recession will have any effect on the art market or not it will be quite interesting to see.

Prior research has identified that affluent persons who desire to engage in the art market encounter difficulties comprehending it due to insufficient transparency, limited liquidity, challenges in withdrawing funds, and a misconception regarding the risk/return ratio.

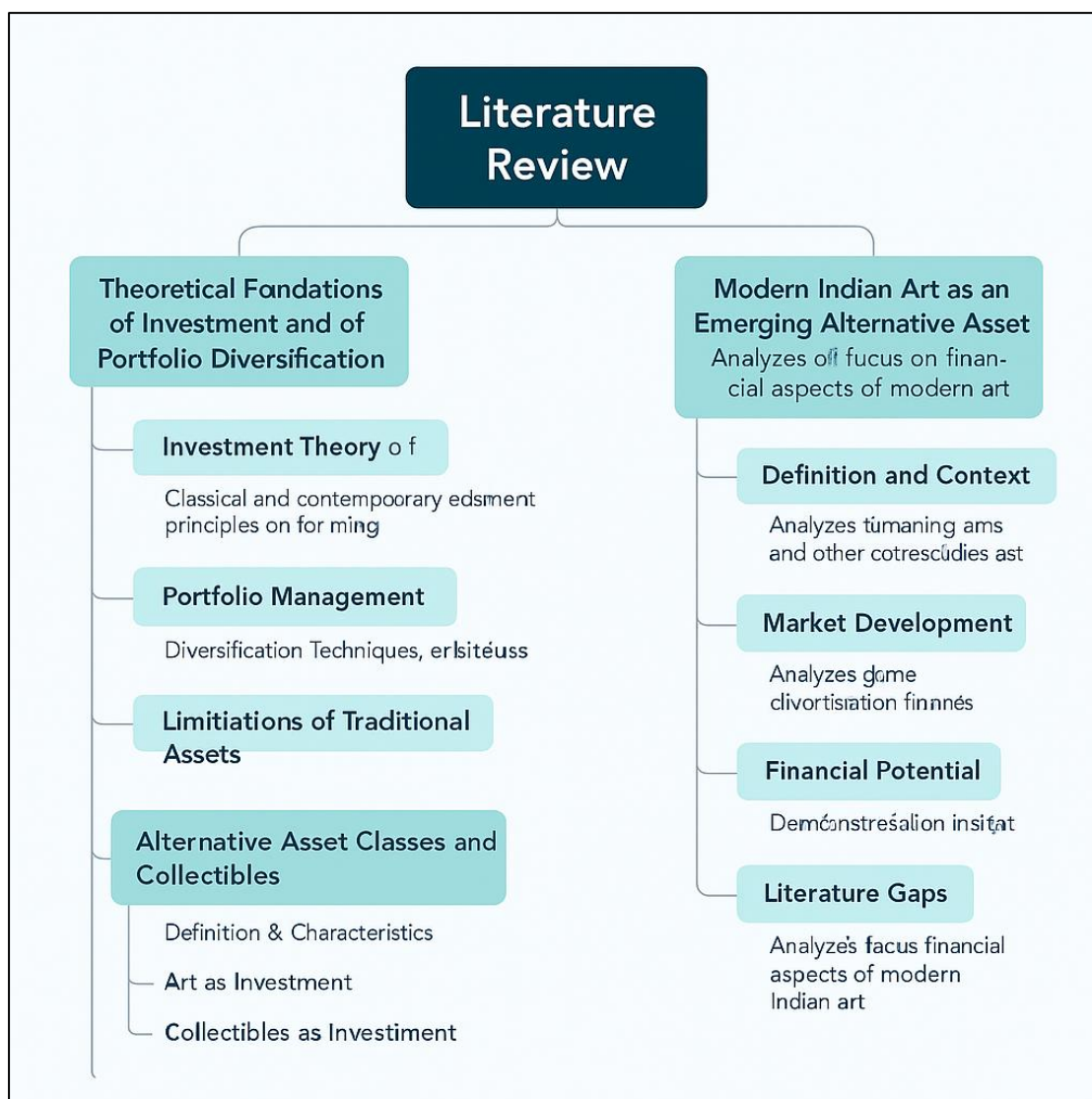


Figure 2.1: Literature Summary and Categorized Synthesis

The literature reviewed in this chapter spans diverse yet interconnected domains. For greater coherence, the findings are synthesized into three thematic categories: foundational investment theories, emerging alternative assets, and the specific potential of modern Indian art as a financial instrument.

Category 1: Theoretical Foundations of Investment and Portfolio Diversification

This stream of literature established the basic principles guiding investment decisions. It covered:

- Core concepts such as income, growth, and speculative investments (Damodaran, 2012).
- **Modern Portfolio Theory (Markowitz, 1952)** and the efficient frontier, which emphasize the risk-return trade-off and diversification benefits.
- Post-crisis investment behavior, especially the reduced attractiveness of traditional assets like stocks and bonds, leading to the need for uncorrelated asset classes for better risk management (Fraser-Sampson, 2011).

Category 2: Alternative Asset Classes and Collectibles as Investment Vehicles

This section provided insights into how non-traditional assets function:

- Alternative assets—real estate, hedge funds, art, wine, and collectibles—exhibit low correlation with traditional securities, enhancing diversification (Chambers et al., 2018).
- Art and collectibles are explored in terms of returns, emotional value, and barriers such as illiquidity and opaque valuation systems (Mei & Moses, 2002; Kaplan & Rauh, 2013).
- Investment in collectibles such as stamps, coins, wine, and vintage cars shows long-term potential but demands expertise and due diligence (Spaenjers & Goetzmann, 2015; Grossman & Livingston, 2018).

Category 3: Modern Indian Art as an Emerging Alternative Asset

- This is the central focus of the research and reveals a clear research gap:
- Modern Indian art, rooted in socio-political and aesthetic rebellion, has evolved into a viable investment class.
- Indian auction data shows exponential growth (Chandra, 2014; Artprice, 2019) and increasing interest from global and domestic investors.
- However, the sector suffers from valuation inconsistency, liquidity issues, and lack of regulatory frameworks, limiting its appeal to cautious investors.
- There is limited India-focused empirical research linking modern art to portfolio theory, warranting further exploration to understand its true financial potential and behavioral implications (Chang, 2013; Zhang, 2018).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The research methodology chapter is a critical component of any thesis, as it provides a detailed account of the methods used by the researcher to investigate the research problem. This chapter outlines the systematic approach taken by the researcher to address the research questions or objectives and achieve the study's aims. It includes describing the research design, data collection and analysis techniques, sampling method, and research instrument.

The research methodology chapter aims to provide a clear and comprehensive overview of the research process. It should explain the reasoning behind the chosen methodology and demonstrate the validity and reliability of the study. The chapter should also discuss any limitations or potential biases that may impact the research findings.

This chapter contains information on the research technique that was employed by the researcher to achieve the study's stated objectives. The actions taken by the researcher to address the research problem methodically are described in the research methodology. To fulfil the objectives successfully, the researcher decided before the data collection to comprehend the research problem. The research methodology includes the problem statement, the objectives of the study, the research questions, the hypotheses formulated by the researcher, the data and its sources, the sampling scheme, the research instrument, the reliability and validity testing, and the tools and techniques used to analyze the data are all included in the research methodology. This chapter thoroughly describes the research technique used by the researcher in the present investigation.

3.2 Statement of the Problem

1. Establishment of art as an alternate asset class for portfolio diversification in the Indian Context

2. Art as a part of an investment portfolio to be judged in comparison to widely used other asset classes.
3. The valuation of art remains an unresolved challenge, as there is currently no comprehensive model available for the equitable assessment of art, in contrast to other asset classes commonly employed for investment purposes.

Academic empirical research is crucial for comprehending the financial performance of the art market and its relationship with financial markets and other investment alternatives. This research is essential in evaluating the viability of art as an investment strategy. Several unique features distinguish artworks as an investment class.

Firstly, the luxury-good status and inelastic supply of art contribute to its value being influenced by changing trends and individual preferences (Botha et al., 2016). The demand for art can be subject to shifts in societal tastes and cultural dynamics, impacting its market value.

Secondly, certain subcategories of art have the potential to deliver returns that may surpass those of traditional assets (Landes, 2000). Artworks with historical significance or those created by highly regarded artists can become valuable collectibles, attracting significant attention from investors and collectors.

Thirdly, art can act as a hedge against unstable currency markets, as it tends to retain its value during times of inflation, providing a safeguard for investors seeking to preserve their wealth (Deloitte, 2017). Art's appeal lies in its ability to offer an enticing opportunity for individuals seeking to broaden their investment portfolio and mitigate the risks associated with currency volatility.

Fourth, while some research suggests that art may provide lower returns with more risk than stocks, it may still be worth considering for portfolio diversification because to its poor connection with typical financial assets (Mei & Moses, 2002). Integrating art into an investment portfolio may provide a means to mitigate overall risk and potentially boost long-term returns.

Overall, understanding the dynamics of the art market through empirical research is vital for investors and financial professionals seeking to explore art as an alternative

investment option. The distinct qualities of art as an investment class, such as its susceptibility to cultural trends, potential for high returns in certain categories, inflation-hedging properties, and diversification benefits, all contribute to its allure and merit further examination in the context of investment strategies.

This study will address the question:

This research will look into the financial consequences of investing in art as a real asset. This question is divided into multiple sub-questions:

1. Is it plausible to conceptualize art as a means of portfolio diversification? Does the inclusion of art within a financial portfolio yield advantages in terms of diversification benefits?
2. Do the risk and return characteristics of art as an investment instrument differ from those of the typical asset class?
3. Comparison of art investment return vis-a-vis return from the traditional asset class. Are there differences in the relationships between art, financial markets, risk, and rewards compared to other investment tools?
4. What are the determinants of the valuation of art?

3.3 Objectives of the Study

This research aims to elaborate on the case for art investments as a portfolio diversification tool, propose an art investment idea, and analyze the influence of the environment on art investments. This research worked along the same lines as the previous one and understood the problem in this business.

Based on the problem statement and gaps found from the literature review, the researcher has set the following objectives for the current research. The objectives of the study are:

1. To analyse the trends and patterns of returns from art investment.
2. To compare traditional asset classes vis-a-vis modern Indian art as investments for portfolio diversification.

3. To evaluate the existing art valuation model applied to determine the worth of modern Indian art.
4. To explore the determinants of modern Indian art valuation.

3.4 Research Questions and Hypothesis

In the realm of research, a hypothesis serves as an essential element, representing an assumption or supposition derived from existing literature or theoretical frameworks. It forms the foundation for a study or experimentation, guiding the investigation and serving as a proposition to be tested. In the context of the current study, several research questions have been formulated, each representing specific aspects that the research aims to explore or investigate. These questions will provide direction and structure to the study, enabling the researchers to delve into the relevant areas of inquiry.

To rigorously examine the research questions and arrive at meaningful conclusions, the study will employ various data analysis techniques. By utilizing appropriate methodologies, the study seeks to put the hypotheses to the test, thus validating or refuting the initial assumptions based on empirical evidence. Data analysis will entail gathering relevant information, organizing and synthesizing it, and submitting it to statistical or qualitative analysis, depending upon the data types and study aims.

Through a systematic and evidence-based approach, the current study aspires to shed light on the research questions and contribute valuable insights to the existing body of knowledge. The formulation and testing of hypotheses are integral to scientific inquiry, providing a structured framework for researchers to investigate complex phenomena and draw meaningful conclusions from the gathered data. As such, the study endeavors to uphold the principles of robust research methodology, transparency, and Sound statistical techniques are required to assure the findings' reliability and validity.

3.4.1 Understand the Trend and Patterns of Art Market Return

Research Question 1: What are the trends and patterns of returns from art investment?

Hypothesis 1: Return on art showing a positive trend between 2011 – 2020.

3.4.2 To compare Traditional Asset Classes vis-à-vis Indian Modern Art as Investments for Portfolio Diversification

Research Question 2: Does art as an investment tool provide better return in comparison to other traditional asset classes?

Hypothesis 2: There is a strong correlation between art index return and return from other asset classes.

Sub Hypothesis

H2a: There is a strong correlation between art and gold return.

H2b: There is a strong correlation between art and stock return.

H2c: There is a strong correlation between art and bond return.

3.4.3 To evaluate the Existing Art Valuation Model Applied to determine the Value of Indian Modern Art

Research Question 3a: What are the determinants of valuation of art available in literature?

Research Question 3b: Are there any model that explain the valuation of art?

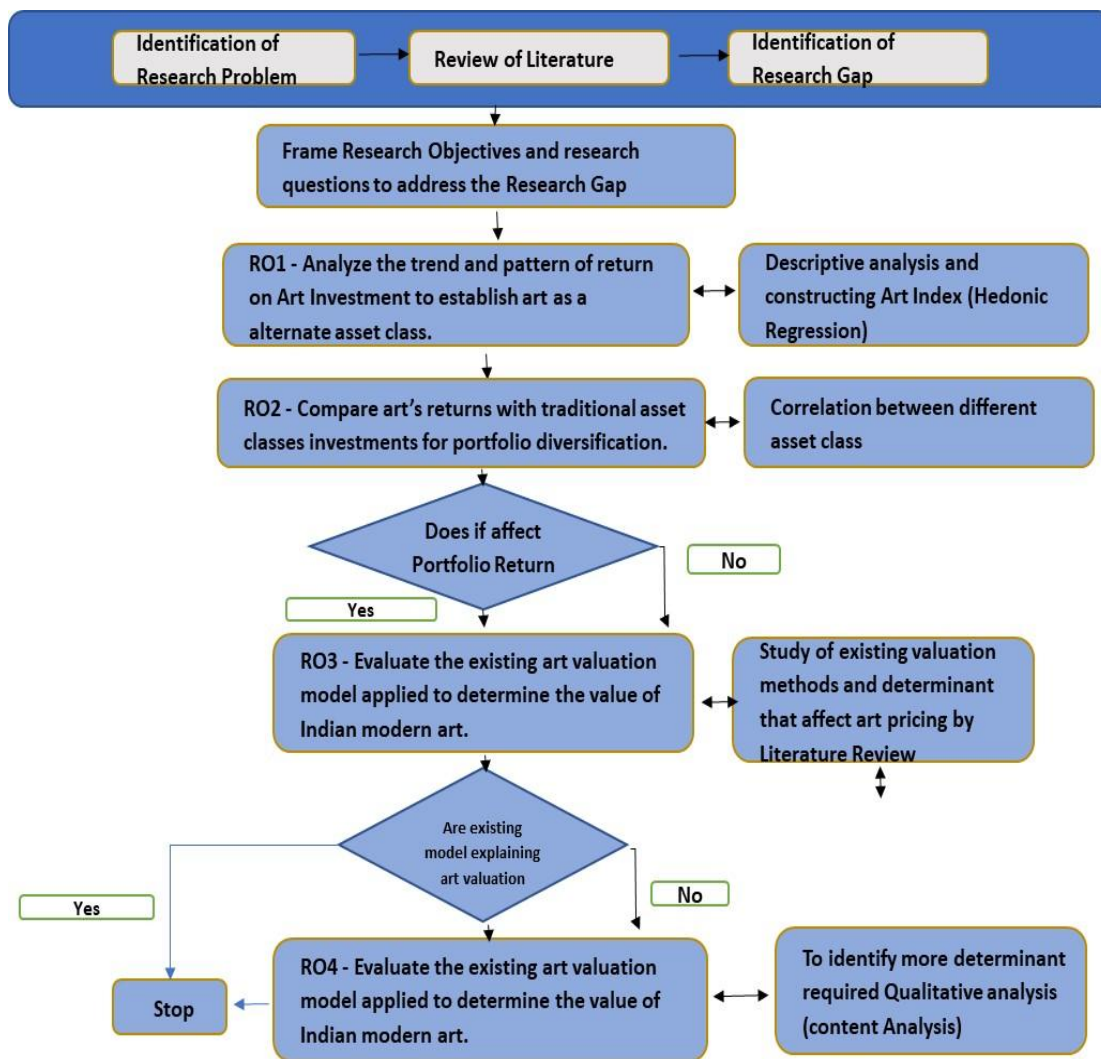
3.4.4 To explore the Determinants of Indian Modern Art Valuation

Research Question 4: What determines the valuation of Indian Modern Art.

3.5 Research Framework

A research framework is a structured plan or methodology guiding the research process. It systematically investigates a specific research question or problem, ensuring the research is rigorous, organised, and focused. A well-designed research framework helps researchers in organising their thoughts, define objectives, and outline the steps necessary to achieve those objectives.

The research framework is visually depicted in Figure 3.1, which outlines the sequential steps followed in the research process. Each stage is described below in detail, highlighting the essential actions taken to attain the research objective.



Source: Compiled by Researcher

Figure 3.1: Research Framework

3.6 Data & Methodology

The recently established Fund Art faces a dearth of comprehensive data to substantiate its engagement with the arts. This scarcity is particularly pronounced when the art market's characteristics of illiquidity and opacity are taken into account, further hindering data accessibility. The paucity of data concerning the financial performance of the art market exacerbates this challenge. As this research centers on the examination of art as an alternative asset class, the emphasis shifts towards the utilization of accessible data originating from art indexes spanning diverse art markets. These indexes function as a surrogate for assessing the performance of a diversified art portfolio. This

approach facilitates the development of a reasonably informed perspective concerning the risk-return profile related to art investments, without obligating any commitment from the Art Fund.

3.6.1 Data (Types and Sources)

Data collection serves as a fundamental methodological approach employed for the purpose of acquiring unprocessed information from diverse sources, thus facilitating the attainment of research objectives. Data can be categorized into two principal types: primary and secondary. Primary data, often referred to as original data, is directly gathered by the researcher from primary sources. Various methodologies exist for the collection of primary data, including questionnaire/survey methods, observational techniques, and personal interviews. In contrast, secondary data comprises pre-existing information that has been previously collected by researchers for different investigative purposes. Secondary data may manifest in the form of published synopses, working papers, reports, or raw datasets, among other forms. The present study draws upon both primary and secondary data sources. The initial segment of the study is dedicated to establishing art as a viable alternative asset class, comprehensively analyzing trends and patterns within art investments, and juxtaposing returns against those generated by traditional asset classes. This analysis predominantly relies on secondary data encompassing auction outcomes, as well as returns from stock and commodity markets. In the subsequent segment of the study, the evaluation of prevailing valuation methodologies is undertaken. Additionally, determinants that influence the valuation of art are identified to establish a fair pricing framework.

3.6.1.1 Primary Data

The research focuses on qualitative and quantitative approaches for identifying the factors that influence the value of artworks. Aiming to get into subjective experiences and provide an effective technique to find characteristics that impact art appraisal, the qualitative interviews were designed to do just that. The discussions also provide the interviewee with freedom from the constraints of a predetermined research instrument

by allowing them to carve their own thoughts and express their opinions of the Indian art industry without limitation.

Initial interviews with the artists were conducted in-depth, and they provided their perspectives on the workings and complexity of the art market, which were particularly relevant to the dynamics of Indian art investors. Artists were chosen using the greatest variation sample strategy proposed by Patton (2002) as the process whereby deliberate and decided qualitative respondents are hand-picked. This technique was selected to ensure a representative cross-section of the target group, which assists in acquiring the most significant amount of variance, the widest possible range of individuals to compare them.

Table 3.1: Profile of Respondents

Category	
Artist	8
Art Collector	2
Auction House	1
Gallery Owner	2
Art Critic	1
Art Dealer	1
Gender	
Male	8
Female	7

In-depth qualitative interviews are essential for facilitating a more profound understanding of the basis of art valuation that is kept in mind while pricing any art piece. The open-ended nature of these semi-structured interview questions allowed participants to express their values in the most natural way possible without fear of their replies becoming distorted.

The preference was given to interviews conducted in person that it represents each section of stakeholder of art market.

Three prerequisites were defined as a prior condition for artists to be interviewed.

- It covers the all-stake holders of the art market like artists, art dealers, art critics, gallery owners, art auction houses and Art collectors
- They must be associated with Indian Art Market, and
- Last that all of them are active and involved in dealing with Indian Art

3.6.1.2 Secondary Data

From 2011 to 2022, Saffron Art conducted auctions for a total of 5,195 paintings and drawings created by Indian artists. Modern art constituted approximately 68.33 per cent of these artworks, while contemporary art comprised the remaining 31.67 per cent. Over 811 million paintings were sold during this period, with each artwork fetching an average price of Rs.3,52,14,960.

Significantly, in 2019, S. H. Raza's "Jaipur" artwork attained a noteworthy milestone in the database. It commanded an impressive price of Rs. 13.5 crore, establishing the highest recorded price for any artwork in the collection.

In art history, Indian artists are often classified into two primary artistic categories: modern and contemporary. The term “modernists” is commonly used to refer to painters born before or around 1940, with this timeframe aligning with India’s independence in 1947. The history of contemporary Indian art, on the other hand, begins in the early 20th century and continues until the 1980s, during which a significant number of artworks now recognised as contemporary were produced (Dalmia, 2001).

Saffron Art (2023) lists several prominent Indian Modernists, including M.F. Husain, Tyeb Mehta, F.N. Souza, S.H. Raza, V.S. Gaitonde, Ram Kumar, and Bhupen Khakhar. Alongside them, contemporary Indian artists have become well-known (Saffron Art, 2023): Manjit Bawa, Atul Dodiya, Subodh Gupta, Jitish Kallat, Anju Dodiya, and Shibu Natesan.

Out of the 72 prominent artists in the database, 36 are classified as modern artists, with the remaining 36 designated as contemporary artists (Saffron Art, 2023). Table 1 provides selling price data categorized by artist type (modern or contemporary) and auction type (major or absolute). Among these, modern artists account for 2,447 sales, whereas contemporary painters account for 1,125 sales (Saffron Art, 2023). The average price of a modern artwork is recorded at Rs. 3,86,49,556, while a contemporary artwork commands an average price of Rs. 2,60,03,620.

Table 3.2: Secondary Data Used for Analysis

Total	7097
Not Sold	1362
Sold	5735
Remove	993
Books	4
After	4738
Sculpture	25
Incomplete data	303
	4410

3.6.2 Study Period

From 2010 through 2022, the research period examined the factors influencing art prices. Indian Art Index was aided by the 12-year data of auctions, which provided a better overall picture and assisted in developing the index (IAI). Contemporary and modern artists are included in the original sample because of their high-quality work in the art world. The global financial crisis was also a part of the 12-year period. It would be fascinating to investigate the movement of art prices in connection to the stock market throughout a recession and recovery. The goal of the study is to investigate the influence of the financial crisis on the Indian secondary art market.

3.6.3 Variables Used in the Study

The acquisition of art is closely intertwined with the financial returns it offers. To investigate this relationship, the study adopts a hedonic approach, wherein a painting is examined as a composite of various attributes, each associated with a shadow price. By incorporating these prices, a comprehensive price index can be constructed. This index is developed through a regression analysis that involves the price of the painting under consideration as the dependent variable. The attributes of the painting, such as the artist's reputation, the size and quality of the canvas, the historical background and provenance of the artwork, as well as the location and timing of the sale, are identified as proxies for these attributes.

The integration of prices facilitates the construction of the desired price index by regressing the price of the painting on the identified attribute proxies. Notably, In hedonic regression, the natural logarithm of the auction price expressed in Indian Rupees (INR) is used as the dependent variable. This transformation is employed to improve the distributional fit of the data and capture potential nonlinear relationships between the price and the various attributes of the artwork.

1. Dependent Variable: The dependent variable is the variable that is influenced by multiple independent factors and its value is determined accordingly. The fluctuation in the dependent variable's value is caused by the linked independent variables that impact it. The dependent variable in the current study is art price.

LOGPRICE: The motivation for purchasing art is directly tied to the financial return. A product (in this example, a painting) is typically rated as a bundle of traits for which shadow prices exist in the hedonic approach. The integrated price involvement contributes to the development of the desired price index, which is the result of the regression of the painting's price on the proxies identified for the attributes, such as a painter's reputation, canvas size and quality, painting history and provenance, location and time of sale, and so on. The natural logarithm of the auction price in INR is thus employed as the dependent variable in hedonic regression.

2. Independent Variable: As the name suggests, the independent variable is the variable whose value is free from variation due to other variables. In the current study, various independent variables have been used.

When valuing paintings, there are several price determinants that can influence the value of a particular artwork. These determinants can vary depending on factors such as the artist's reputation, the artwork's provenance, its condition, and market demand. Here are some common price determinants considered during the valuation process:

Artist: The reputation, popularity, and historical relevance of the artist all have a role in establishing the value of a painting. Renowned and established artists generally command higher prices compared to emerging or lesser-known artists.

Artistic Significance: The painting's artistic quality, style, and innovation contribute to its value. Paintings that are considered masterpieces or representative of a particular art movement tend to have a higher value.

Provenance: The painting's provenance refers to its documented history of ownership, including any famous or notable previous owners. Paintings with a prestigious provenance, such as those owned by prominent collectors or museums, often have higher values due to their historical importance and association.

Condition: The condition of the painting affects its value. Paintings in excellent condition, with minimal damage or restoration, generally command higher prices than those with significant wear, damage, or poor restoration work.

Rarity: The scarcity or rarity of the artwork can impact its value. If the painting is one of a kind, a limited edition, or part of a small series, it may have a higher value than more readily available artworks.

Size and Medium: The physical dimensions of the painting and the materials used can influence its value. Larger paintings often have higher prices due to the increased effort and materials involved. Additionally, paintings created with rare or valuable mediums, such as oil paints or precious metals, may have higher values.

Auction Records and Sales History: Prices obtained in past auctions or private sales for comparable artworks by the same artist might be used to determine the worth of a painting. Historical sales data reveals market perceptions of the artist and their work.

The hedonic regression approach is used to assess the implicit price of a painting's discernable and visible qualities. This strategy entails converting the characteristics of artwork into binary or dummy variables that rationalize the observed market pricing. The explanatory variables in the hedonic pricing model are divided into three groups that reflect major price factors in the context of Indian artworks.

The first group of explanatory factors focuses on the unique individual traits of the artist who created the picture. These characteristics reflect the artist's reputation, style, and past honors or recognition.

The second set of variables pertains to the artwork's physical features and tangible attributes. This includes the size, medium, subject matter, and overall painting quality.

The third set of variables concerns the artwork's temporal features, which include criteria like as historical relevance, provenance, and the duration when painting was made or sold. By incorporating these variables into the hedonic regression model, the study aims to analyse the factors influencing the pricing of Indian artworks comprehensively.

Multicollinearity represents a notable drawback of the hedonic regression method. This phenomenon arises when a high correlation exists among the variables included in the analysis, amplifying the standard error associated with the regression coefficients. To mitigate the issue of multicollinearity, a strategy employed involves creating a reference variable for each dummy variable within the model. Subsequently, these reference variables are excluded from the sample, addressing the collinearity concern.

By generating reference variables for the dummy variables, the regression model can effectively handle the issue of multicollinearity. This approach allows for the estimation of reliable regression coefficients and facilitates the interpretation of the impact of individual variables on the price determination process. It can help in identifying price determinants:

3.7 Methodology

3.7.1 Qualitative Study

In-depth qualitative interviews with artists, art collectors, art historians, and other industry experts can be valuable for identifying and understanding the price determinants in the art market. Qualitative studies can provide insights into the subjective factors that influence art valuations, including the perceptions, preferences, and motivations of individuals involved in the art world.

Exploration of Subjective Factors: Qualitative interviews allow researchers to delve into the subjective aspects of art valuation. By speaking with artists, collectors, and experts, researchers can explore factors such as artistic significance, emotional appeal, cultural context, and personal connections that may influence the perceived value of a painting.

Understanding Artistic Intent: Interviews with artists can provide insights into their creative process, motivations, and intentions behind their artwork. This understanding can shed light on how artists perceive their work's value and the factors they consider important. It can also reveal how artists navigate the art market and interact with collectors and galleries.

Collector Preferences and Trends: Interviews with art collectors can offer valuable insights into their preferences, collecting strategies, and the factors that drive their purchasing decisions. Collectors' perspectives on factors such as artist reputation, provenance, market trends, and personal taste can help identify patterns and trends in the art market.

Expert Opinions and Art Historical Context: Engaging art historians, curators, and experts in qualitative interviews can provide historical and contextual perspectives on art valuations. These discussions can shed light on the significance of certain artists, styles, or periods and how they are valued within the art historical framework. Experts can also provide insights into the evolving nature of the art market and its impact on pricing.

Researchers can gain a more thorough knowledge of the price determinants for artworks by integrating qualitative interviews with various stakeholders in the art industry. These qualitative insights may be used to supplement quantitative models, providing a more nuanced and comprehensive picture of the elements impacting art appraisals.

3.7.1.1 Analysis and Methodology

To analyse qualitative interviews using quantitative research methods, used “coding” or “content analysis.” While qualitative data is typically non-numerical, coding allows assigning of numerical values or categories to different themes, patterns, or concepts that emerge from the interviews. Here’s an overview of how you can approach this analysis: While coding qualitative data using quantitative techniques can provide structure and allow for numerical analysis, it’s important to maintain the context and richness of the original qualitative data.

Transcribe and Organize Data: Begin by transcribing the qualitative interviews verbatim, ensuring the accurate written records of the conversations. Once transcribed, organise the data by creating separate documents or files for each interviewee.

Develop a Coding Scheme: A coding scheme is a system of labels or categories used to analyse and categorise the data. Start by reading through the interviews to familiarise yourself with the content. Then, the identification of common themes, patterns, or concepts from the interviews. These could influence art valuations, specific opinions or preferences, or other relevant ideas. Based on these, develop a list of codes representing these themes or concepts.

Code the Data: With the coding scheme in place, begin coding the interview data. Read through each interview and assign relevant codes to sections or quotes corresponding to the identified themes or concepts, which can be used in highlighting, colour-coding, or other methods to indicate which parts of the interview are associated with each code.

Quantify the Codes: Once the interviews have been coded, you can quantify the data by tallying the frequency of each code. Count how often each code appears in the interviews to determine the prevalence of specific themes or concepts. These codes can also calculate percentages by dividing the frequency of each code by the total number of occurrences or by the total number of interviews.

Analyse Patterns and Relationships: With the quantitative data generated from the coding process, perform various analyses to identify patterns, relationships, or trends. It might create bar charts or pie charts to visualise the distribution of codes, conduct statistical analyses to explore associations between codes or interviewee characteristics or compare frequencies across different groups or categories.

Interpret and Report Findings: Finally, interpret the quantitative findings in the context of research objectives. Identify key insights, patterns, or relationships that emerge from the data. Summarise the findings and present them in a clear and concise manner, using appropriate visualisations, tables, or graphs to enhance understanding.

Thematic analysis, according to Braun and Clarke (2006), is a systematic method of finding, evaluating, and interpreting patterns in qualitative data. This method was employed in the current study to explore the motivations and demographics of art investors, focusing on an area that has received limited research attention.

The analysis process began with a careful examination of the interview data, aiming to identify recurring themes or subjects. These themes were then organized into categories, forming a comprehensive catalogue of subjects. These categories were considered as the key findings of the study.

To establish the interconnectedness of the categories, further analysis was conducted. This involved exploring the relationships and connections between different themes, seeking to uncover broader patterns and understand the complex dynamics within the data.

As a result of this thematic analysis, a detailed portrait of art investment motivations and the demographics of art investors emerged. The findings provided valuable insights into the underlying factors that drive individuals to invest in art and shed light on the characteristics and backgrounds of art investors.

Nowell et al. (2017) discuss this in their study "Thematic Analysis: Striving to Meet the Trustworthiness Criteria." This paper provides a systematic approach to theme analysis, highlighting the method's dependability and rigor.

Table 3.3: Stages of Thematic Analysis, as outlined by Nowell et al. (2017)

S.No.	Stages	Process Description
1	Familiarising with the data	This step entails familiarizing oneself with the data by reading and re-reading it several times. Researchers hope to thoroughly comprehend the subject matter and immerse themselves in the data.
2	Generating initial codes	Researchers identify initial codes in this stage by systematically labelling and categorising meaningful data units. Codes are created to capture key concepts, ideas, or patterns within the dataset.
3	Searching for themes	Researchers search for potential themes by organising and collating relevant codes. They look for patterns or connections between codes to uncover broad themes that convey the substance of the data.
4	Reviewing themes	This stage involves reviewing and refining the identified themes. Researchers consider the coherence and consistency of each theme and examine their fit with the entire dataset. Themes may be adjusted, combined, or split to enhance their accuracy and relevance.
5	Defining and naming themes	Each theme's limits and qualities are meticulously defined by researchers. They provide clear and simple descriptions that correctly convey the theme's content and significance. Themes are given meaningful and fitting titles.
6	Report Compilation	The final stage involves synthesising the analysis and coherently presenting the findings. Researchers write a comprehensive report that includes the selected quotes or examples representing each theme and an in-depth analysis and interpretation of the data.

Nowell et al. (2017) emphasise the importance of transparency, reflexivity, and consistency throughout the thematic analysis process to ensure trustworthiness and rigour in the research.

The objective of thematic analysis in the context of art valuation would be to get a greater knowledge of the variables and themes that impact the decision of values for artworks. By conducting thematic analysis on qualitative data such as interviews, surveys, or observations with relevant stakeholders (e.g., artists, collectors, art market experts), researchers can uncover recurring themes, perspectives, and considerations related to art valuation. This qualitative exploration can provide valuable insights into the subjective, cultural, and contextual factors that contribute to price determinants.

While thematic analysis can help identify and interpret these themes, it is significant to note that the analysis itself does not directly quantify or determine the specific price determinants. Thematic analysis provides a qualitative exploration and understanding of the underlying factors influencing prices, which can complement quantitative approaches and inform further research or valuation methodologies.

3.7.2 Quantitative Study: Statistical Techniques

The researcher has used the following statistical techniques for the analysis:

3.7.2.1 Descriptive Analysis

Descriptive data analysis includes the mean, median, skewness, frequency distribution, cumulative frequency, percentage of data, standard deviation, range of data etc. These are the basic statistical techniques used to make the data more meaningful and to represent the data in a clearer and more understanding manner. Descriptive statistics were used to examine the distribution and characteristics of art prices and returns.

The first step in the investigation was to collect information on the most important factors. The fundamental demographics of the sample were considered by tabulating a range of frequencies.

An analysis of the Indian art market's evolution, structure, fads and trends is provided by descriptive statistics. Analysing the data's makeup offers a more accurate picture of the market's shape and structure.

This data is essential for emphasising important data traits and aspects used in statistical model applications. A model's explanation of art pricing is based on the characteristics

of artists, the uniqueness of their works, and the motives of art collectors and investors, all of which are incorporated into the model.

3.7.2.2 Regression Analysis

Multiple regression analysis (Gelman, 2006) examines the connection between a dependent variable and more than one independent variable. Multiple regression analysis is used in this study to assess the association between art returns and stock market returns.

The following are the regression equations used in the current study:

The researcher has used the Enter Regression Analysis in the current study. Enter regression is a method in which the independent variables are added or removed based on their-t-value of their estimated coefficients. This method gives more concise and accurate results while applying the multiple regression analysis. Regression analysis assessed the relationship between art returns and stock market returns.

3.7.2.3 Hedonic Regression

Hedonic regression is a statistical approach used to determine the implicit value of a product's or service's unique qualities or traits. It is commonly used in the field of economics, particularly in the analysis of housing markets.

The concept of hedonic regression was first introduced in the 1960s by economist Sherwin Rosen. However, its application in empirical research gained prominence in the 1970s and 1980s. The technique became popular in the analysis of housing markets to estimate the implicit value of various house features including the quantity of bedrooms, the area in square feet, and the nearness to facilities. By analyzing a large dataset of housing transactions and controlling for other factors, researchers could use hedonic regression to isolate the effect of specific characteristics on housing prices. This allowed them to estimate the monetary value that individuals placed on these features. For example, hedonic regression could help determine how much extra buyers would pay for an additional bedroom or a larger backyard.

Since its introduction, hedonic regression has been applied to various other domains beyond housing markets, such as pricing consumer goods, estimating the value of environmental amenities, and assessing the impact of technological advancements on product prices. Hedonic regression was first introduced in the 1960s by Sherwin Rosen but gained significant traction in the 1970s and 1980s, particularly in the analysis of housing markets. It has since been applied to diverse fields to estimate the implicit value of product attributes.

Art, akin to commodities such as automobiles and real estate, falls under the category of hedonic goods, where its attributes play a pivotal role in influencing the willingness of buyers to pay for it. Within our dataset, price variations may be attributable to variances in the characteristics of paintings, but they may also be influenced by shifts in the broader market's supply and demand dynamics. The utilization of hedonic regression in the domain of art investment and valuation research has a historical precedent dating back to the late 1980s and early 1990s.

The research, titled "The Relevance of Hedonic Price Indices: The Case of Paintings" by Chanel, Gérard-Varet, and Ginsburgh (1996), explores the application of hedonic price indices in the context of the art market, specifically focusing on paintings. The authors aim to assess the usefulness and limitations of hedonic regression as a method for estimating price indices in the art market. In the study, the authors analyze a dataset of auction sales of paintings, employing hedonic regression to estimate the implicit values of various characteristics that influence the prices of artworks. They examine factors such as artist reputation, medium, size, subject matter, and other relevant attributes. The paper discusses the advantages and challenges of using hedonic regression in the art market, including issues related to data availability, the selection of variables, and the potential presence of unobservable factors affecting art prices.

Following Chanel et al. [1994], use the following regression to breakdown the price of an artwork.:

$$\ln p_{kt} = \gamma + \beta_t + \sum_{i=1}^m \alpha_i x_{i,kt} + \varepsilon_{kt} \quad \text{Equation 1}$$

The equation (equation 1) that relates to the pricing of paintings in different years and aims to create a price index to analyze market trends while accounting for variations in painting characteristics. The variables used in the equation are defined as follows:

“ p_{kt} ” represents the price of a specific painting “ k ” sold in year “ t .”

“ β_t ” refers to the year-dummies, which capture the price trends in each year.

“ $x_{i,kt}$ ” denotes the i -th characteristic of painting “ k ” sold in year “ t .”

“ α_i ” represents the coefficient for the i -th characteristic, and it can be seen as the implied market price of that characteristic.

Equation (1) allows for the calculation of the log price of a standardized painting in a given year, denoted as “ β_t .” This standardized price represents a baseline or reference value that indicates the general trend of painting prices in that particular year. To understand the impact of specific painting characteristics on the actual price “ p_{kt} ” in a given year, the term $\sum_{i=1}^m \alpha_i x_{i,kt}$ is included in the equation. This term explains the deviation of the actual painting price “ p_{kt} ” from the baseline “ β_t ” due to the influence of these specific characteristics.

By computing the exponentiated values of “ β_t ” for each year from 2011 to 2022 ($e^{\beta_{2011}}$, $e^{\beta_{2012}}$, ..., $e^{\beta_{2022}}$), a price index is derived. This price index allows researchers to examine and analyze broader market trends in painting prices over time while controlling for the inherent differences in the characteristics of individual paintings being auctioned.

Overall, this approach provides a comprehensive framework to study how various characteristics of paintings contribute to their prices, while also allowing researchers to observe and interpret overall market trends in the art market over the specified period, ensuring a more nuanced and informed analysis.

To identify art price determinants and for the construction of art, the market index used hedonic regression to determine the framework for an artwork’s price development. By considering the absolute inclusion of data points from the sample, as well as

heterogeneity problems and prejudice, Fase (2001) proposed that hedonic regression overcame the sample biases of the previous approaches.

3.7.2.3.1 Art Price Index using Hedonic Regression

Art Indices: Similar to stock market indices, art indices track the overall performance of the art market or specific segments of it. These indices are typically based on aggregated data from art sales and provide a quantitative measure of the market's performance and trends. They can be used as a benchmark for comparing the value of specific artworks or as a reference point for tracking the art market's overall growth.

It was disclosed by Citadel (2011) that the need for an art price index is necessitated, among other things, by the investors' insatiable drive to discover new assets that might increase risk-adjusted returns while also aiding in the diversification of their financial portfolio. Even though art and financial assets are related in various ways, few non-trivial differences between the two have prevented art from being included in portfolio construction or using other more advanced approaches to analysis.

It has been shown in the preceding section that paintings are heterogeneous in terms of painting assets, and that a diverse range of tangible and intangible characteristics contribute to the distinction and uniqueness of a given artwork. The following tasks were completed to estimate the coefficients of the binary time dummy variables and run the regression on hammer prices derived from existing sales for 2010 to 2020: The hedonic regression model is created per the equation.

Time dummy coefficients, as specified in the equation, are suggested by the antilog (or exponential) The first year is designated as the base year, which means that the year 2010 is equivalent to 100. This makes it possible to calculate pricing about the reference year 2009. According to Renneboog and Ven Houtte (2002), this computation represents price volatility driven by economic and behavioural components such as inflation, amortisation, and investor bias, among other factors.

3.7.2.4 Correlation Method

Correlation analysis was used to determine the degree of correlation between the study's variables. Székely (2007) defines correlation analysis as the measurement of the connection between two variables. It contributes to determining the degree and direction of the link by revealing how changes in one variable correspond to changes in another. By employing correlation analysis, the researchers explored the interdependence or connection between the variables under investigation (Székely, 2007). The positive or negative sign shows the relationship between two variables, and the p-value shows the significance of the correlation between the two variables. In the current study, the Correlation analysis was used to assess the relationship of the Researcher, has used Karl Pearson's' correlation method to measure the correlation coefficients. The formula for calculating the correlation coefficient is as follows:

$$r = \frac{N\sum xy - (\sum x)(\sum y)}{\sqrt{[N\sum x^2 - (\sum x)^2][N\sum y^2 - (\sum y)^2]}} \quad \text{Equation 2}$$

Where,

N = Number of pairs of scores

xy = Sum of the products of paired scores

x = Sum of the x scores

y = Sum of the y scores

x^2 = Sum of the squared x scores

y^2 = Sum of the squared y scores

The value of $r = +1$, perfect positive correlation, $r = -1$, perfect negative correlation, $r = 0$ no correlation, r between -1 to 0 , means negative correlation and r between 0 to 1 , means positive correlation.

3.8 Chaptalization of the Thesis

This thesis is organized into eight chapters, each contributing to the structured exploration of modern Indian art as an emerging alternative asset class for portfolio diversification.

Chapter 1: Introduction outlines the background, rationale, objectives, and significance of the study, establishing the contextual foundation for the research.

Chapter 2: Review of Literature critically analyzes existing theoretical and empirical research related to investment theory, alternative assets, and art finance, with a focused synthesis on the Indian context.

Chapter 3: Research Methodology explains the methodological framework adopted for the study, detailing the research design, data sources, sampling methods, tools used for analysis, and justification for the selected approach.

Chapter 4: Art Market Trend investigates historical and contemporary developments in the Indian art market, examining sales data, growth patterns, and market dynamics relevant to investment decision-making.

Chapter 5: Comparative Analysis of Indian Art as an Investment: Diversifying the Portfolio offers a comparative study between traditional asset classes and Indian art, emphasizing its potential for diversification based on risk-return parameters.

Chapter 6: Art Valuation Model presents a valuation framework based on hedonic pricing and repeat sales regression techniques to assess the financial worth of Indian art.

Chapter 7: Determinants of Indian Modern Art Model identifies and evaluates the key determinants influencing the valuation and investment performance of modern Indian artworks using statistical modeling.

Chapter 8: Summary, Findings and Suggestions consolidates the key findings, offers interpretations, and puts forward practical and theoretical recommendations for investors, policy makers, and future researchers in the domain of art investment.

3.9 Conclusion

Until the 1980s, the artworks that are today regarded as contemporary Indian art were primarily viewed as part of the subcontinent's traditional or provincial art (Dalmia, 2001). These paintings were frequently neglected or mixed along with other South Asian art in catalogues and presentations by leading auction houses on the global art scene. Local galleries, which play an important role in Western countries in presenting and explaining the aesthetic evolution of modern creative professions, styles, and movements via art, were few (Peterson, 1997).

Mei and Moses (2002) conducted an insightful study that involved analyzing 4,896 pairs of repeat transactions in the art market. They created an annual art price index spanning the years 1875 to 2000 using this approach. The research's findings revealed that art exhibited higher returns compared to bonds but lower returns compared to stocks, aligning with conclusions drawn by Goetzmann (1993).

Additionally, Campbell (2005) employed the repeat sales approach to assess the performance of the art market from 1976 to 2002. The study determined an average annual rate of return of 10.07 per cent, accompanied by an annual standard deviation of 21.88 per cent. These statistics provide valuable insights into the fluctuating nature of art investment returns and highlight the potential for significant variations in the art market over time.

The classification of modern Indian art as a distinct genre emerged gradually over the 20th century, moving away from its previous association with traditional or regional art. Moreover, academic research has been crucial in understanding the dynamics of the art market, as evidenced by the extensive analysis carried out by Mei and Moses (2002) and Campbell (2005) using the repeat sales method. These studies offer valuable perspectives on the financial performance of art compared to other investment options, showcasing the multifaceted nature of the art market as an investment class with its unique risk and return characteristics.

Investors have been drawn to explore new investment opportunities, including the real estate market, commodities, venture capital, and hedge funds, due to the

underwhelming performance of traditional assets (shares and bonds) in recent years. Artworks are becoming increasingly attractive as an investment vehicle due to their low connection with traditional assets.

Table 3.4: Research Design Summary

Description	Price Determinants		Develop an Art Index	Portfolio Diversification
	Qualitative	Quantitative		
Type of Study	Preliminary Study	Primary Study	Secondary Study	Secondary Study
Sample size	15	160	4410	Index data – Stock and Gold
Time Frame			2010 -2022	2010 -2022
Data Source	In depth Interviews (Stake holders from art fraternity)	Questionnaire	SaffronArt.com	BSE/ NSE S&P BSE 500 Index MCX
Tools and Techniques	Content Analysis	Factor Analysis	Construct a Art Price Index Hedonic Regression	Graphs and charts

CHAPTER 4

ART MARKET TREND

4.1 Introduction

The modern Indian art market emerged as a significant player in the late 1990s, as considerable interest and recognition was given to contemporary Indian artists in India and internationally. This has resulted in the rapid growth of the market for modern Indian art. One of the key players that helped shape this emerging market was Sotheby, who started conducting dedicated sales of Indian art in the late 1990s. These auctions provided a platform for art collectors and enthusiasts to acquire work by prominent Indian artists.

The market witnessed tremendous growth in its initial years, with increasing prices and high demand for Indian art. The period between the late 1990s and early 2000s saw record-breaking sales and a flourishing art scene in India. This growth was fueled by factors such as a booming Indian economy, the rise of a new generation of artists, and the growing global interest in Indian culture. However, the market experienced a downturn starting around 2007-2008. During the said period, the global financial crisis occurred worldwide, which had a profound impact on the art market. Consequently, the Indian art market also witnessed a decline in sales and prices.

The global financial crisis in 2009 resulted in a 30% reduction in the total count of billionaires globally, along with a 45% decline in their collective wealth. Nevertheless, in the year 2020, there was a 7% rise in the number of billionaires, accompanied by a 32% surge in their collective worth when compared to the preceding year. A study conducted by Arts Economics and UBS Investor involving 2,569 high-net-worth (HNW) collectors in ten regions found that despite the COVID-19 epidemic, they remained actively engaged in the art market. In the poll, 66% of respondents stated that the epidemic boosted their interest in collecting data, with 32% reporting a substantial increase. HNW collectors are expected to be active in the market by 2021, with 57% intending to add to their existing collections of works of art throughout the year. The buying habits and tastes of HNW individuals are crucial for determining important

trends in the art market. As the number of HNW individuals increases, so does the demand for art, as shown by the fact that some collectors have a disproportionately large percentage of their total wealth invested in art, with 61% reporting an allocation of more than 10%. (Arts Economics, 2021).

The fiscal year 2022-2023 (FY23) showcased an impressive growth trajectory in the Indian art market, further consolidating the previous year's successes. During this period, the market exhibited a remarkable performance, with a noteworthy turnover of 1,145.5 crores (\$144.3 million) from selling 3,833 artworks. This notable achievement signifies a substantial 9% increase in turnover compared to the preceding year, accompanied by a 6% growth in the number of artworks sold. The average price of artworks sold in FY23 stood at 29.9 lakhs (\$37.7 thousand), reflecting a modest 3% increase from the previous year (Abirpothi, 2023).

The Indian art market witnessed a surge in auction activity, showcasing a broader range of artworks and opportunities for buyers and collectors. In the fiscal year 2022-2023 (FY23), the Indian art market experienced a significant expansion in its auction sector. A comprehensive analysis reveals that a total of 132 auctions were conducted during this period, showcasing an 11% increase compared to the preceding year. This growth in auction activity demonstrates the sustained interest and engagement of collectors and buyers within the Indian art market.

Moreover, the number of works offered for sale during FY23 witnessed a notable upsurge, reaching a total of 4,240 artworks. This substantial increase signifies an 11% growth in the availability of artwork compared to the previous year. The expanded offerings in the market present a vibrant and diverse range of artistic expressions, catering to the diverse tastes and preferences of art enthusiasts and collectors.

The enhanced traction observed in the Indian art market during FY23 indicates a heightened level of engagement and signifies the market's commitment to facilitating a broader and more inclusive art ecosystem. By providing a wide array of artworks spanning various styles, genres, and mediums, the market effectively accommodates the diverse interests and preferences of its stakeholders. Research recognizes the significance of this increased traction and diverse range of artworks within the Indian

art market during FY23. The research attempts to shed light on the developing dynamics of the market and their influence on the general growth and vitality of the Indian art scene by diving into the underlying elements and ramifications of these developments. The global average is 27%, whereas the Asian average is 39%.

Shishir Baijal, the Chairman and Managing Director of Knight Frank India, stated that the number of Ultra High Net Worth Individuals (UHNWIs) in India is expected to increase by 63%, reaching 11,198 people by 2025, which makes India the second fastest-growing country in this regard. This growth presents new opportunities to introduce wealth-generating assets and to expand the number of rich individuals in the country.

The recent upswing in trends suggests the emergence of a new category of buyers, consisting of affluent families, professionals on the rise, and entrepreneurs from diverse fields, all of whom contribute to the growing number of high net-worth individuals (HNIs). This swelling of the HNI group, abetted by their substantial disposable wealth, has had a profound impact on investment behavior. As a result of the increasing global liquidity and wealth creation, prices across all asset classes are soaring, driving HNIs to explore new investment opportunities.

The dynamic growth of India's economy and the surge in its ultra-wealthy population are expected to create a fertile ground for investment opportunities and wealth accumulation. As new segments of affluent individuals enter the market, the demand for diverse investment options is on the rise, driving the exploration of innovative and lucrative wealth creation assets.

Creating and efficiently disseminating art knowledge in an asset class and awareness of art by organising exhibits and seminars to promote art would assist establish a precise and sophisticated Indian art market. It will also provide an ideal opportunity to pique the attention of international investors in Indian art while boosting India's cultural soft power and tourism. The Chinese have achieved this; India may also enter the Indian art medium.

In December 2005, Christie's auctioned Tyeb Mahishasura for \$1.6 million (Rs7.5 crore). In 2008, Christie auctioned M.F.. Husain's Battle of Ganga and Jamuna: Mahabharata 12 for the same amount. These events have been widely publicized and have led to the emergence of art as a new asset class.

However, enthusiasm for art investments has waned since the 2008 financial crisis, and the prices for art, such as inventories and commodities, have decreased. However, the market is expected to recover soon, as multiple global records were set between September and April of that year, with only April 2021 seeing auction sales of Rs 260 crores. In addition, many people have invested in safer art as an alternative asset.

On September 3, 2020, V.S. Gaitonde's oil painting (1974) in Mumbai was sold to 32 crores by Pundole, setting a new record in the Indian art market. An anonymous international consumer purchased a 60x40-inch artwork over the phone during the pandemic. Other notable artworks that have set records at various auctions include Gaitonde's sale at Christie's in Mumbai in 2015, Raza's Tapovan, which was sold at a 2018 New York auction, and Amrita Sher-Gil's Little Girl in Blue, which was sold for 29.03 crores.

On September 29, Sotheby held an auction of Indian art in London featuring 16 unpublished works by artists such as Gaitonde, Ram Kumar, and Bhupen Khakhar. The auction included a painting of Shri Shankerbhai V. Patel near the Red Fort, which was originally worth 4.3 euros but sold for 19.17 euros.

The onset of the COVID-19 pandemic and the consequent implementation of preventive measures globally have witnessed a surge in global art market activity, resulting in the attainment of remarkably high auction prices for select art pieces. Art enthusiasts and collectors have been willing to pay extravagant sums for artworks, a trend evident in the auctions hosted by prominent Indian art institutions, including Saffronart, Pundolas, among others.

"India's art industry was valued at around Rs 200 crore in 2000 and grew to around Rs 1,700 crore by 2020, if the trajectory is followed by around Rs 16,000 crore each year by 2040, the CAGR should be taken into account," says Ashvin Rajagopalan, director

of the PIRAMAL art foundation. "Similarly, Ishrat Kanga, Senior Manager and Specialist at Sotheby's London, noted that the "first half of 2020 saw 575 million dollars in worldwide private art sales, up 10% from last year." " In 2020, a total of over 200 online auctions were conducted, marking a fourfold increase compared to the previous year," she highlighted. During the initial six months of 2020, a notable 88% of all bids placed at Sotheby's occurred through online channels. Furthermore, it is noteworthy that over a third of the online clientele were first-time participants, and more than a quarter of the buyers were below the age of 40, representing a global demographic trend.

The Indian art market is dominated by several major auction houses, with Saffronart leading the group with 26.6% market share. Christie follows closely behind with 21.1%, while AstaGuru and Sotheby hold 18% and 13.2%, respectively. Additionally, Pundole and other auction houses have a combined 9.2% market share. Although Christie withdrew from live auctions in India, it still maintains a strong presence through online sales. (Princess Tewari, 2018). The Indian art market experienced a period of rapid growth in the early 2000s, with Sotheby's auction of Indian art in 2007 achieving record sales of \$36 million. However, the market faced a downturn following the global financial crisis, and sales figures and prices declined in subsequent years due to various factors, including global economic slowdown, speculative buying, and inflated prices. Despite this recent decline, the Indian art market remains vibrant and growing, driven by the growing interest in Indian art from both domestic and international collectors.

"The development of art and cultural initiatives helps build a solid basis and makes India one of the leading art destinations. But the business is still struggling with infrastructure, taxes and a lack of knowledge about art. However, with the combined backing of both private actors and government institutions, the sector is expected to start upon a significant trajectory of development," Girish Menon of KPMG India, the media and entertainment.

The primary purpose of this research is to measure and assess the monetary appreciation of artwork across time. The rate of return on investment in artwork is widely accepted in the literature to be higher than that of equivalent risky assets in financial markets (Rush, 1961, p. 385; Keen, 1971, p. 24). However, one significant

challenge hindering informed discussions on this subject is the absence of a dependable measure for gauging the overall increase in the price of paintings. Addressing this limitation is significant to gaining a comprehensive understanding of the financial performance of paintings as an investment asset.

4.2 Data Source

The dataset used for this study includes paintings and drawings by Indian artists that were sold in Saffronart.com auctions between 2011 and 2022. The dataset comprises 7097 observations, with 5195 artworks sold at an average price of Rs 12,18,084, totaling almost Rs 609 crore. The artwork titled "Jaipur" by S.H. Raza holds the distinction of achieving the highest sale price in the database, commanding a remarkable 13.87 crore. Saffron Art has introduced two innovative features to its auction process. First, despite following an ascending bidding structure, auctions are conducted online, similar to the format used by eBay.com. Second, unlike traditional internal auctions, all product auctions commence simultaneously on a designated day. Prior to each auction, Saffron Art organizes exhibitions in London, New York, and Mumbai, enabling potential buyers to inspect the artworks physically. Payment options are available in both Indian rupees (INR) and US dollars (USD). Saffron Art conducts four main auctions annually, and each sale comprises an average of 100 to 120 artworks, as presented in Table 1, which provides a comprehensive overview of the artwork details.

The most expensive Indian art sold globally in 2021 will be VS Gaitonde's 1961 painting, which cost 39.98 crores in a new Saffronart auction earlier this year. Gaitonde, together with F.N. Souza, S.H. Raza, and M.F. Hussain, founded the Progressive Artists Group in Bombay. He later moved to Delhi, where he died in 2001. In terms of artistic sensibility, Gaitonde was India's zen master. "Artists like Gaitonde and Ram Kumar sought to break free from European influences and rediscover Indian sensitivity." Amrita Sher's "In Gil's the Ladies' Enclosure" was the second most important Indian piece of art sold internationally, fetching a remarkable 37.8 crore at the recent summer live auction in Saffronart.

In the Indian art auction market in 2020-21, there were only 55 female artists participated, while 303 male artists participated, accounting for 84.6% of the overall

artist population. Amrita Sher-Gil and Sunayani Devi were the only two pre-modern female painters to take part in the auction activities that year. The genre of contemporary art had the highest number of female artists, but the number of contemporary artists had decreased significantly from 334 in the previous year to 171 in the current year. Additionally, Contemporary art had the lowest representation of male and female artists compared with other genres in the same year.

This report delves into an examination of the leading female artists in the Indian auction art market during the period of 2020-21. Notably, Amrita Sher-Gil emerges as the frontrunner, registering sales totaling 15.4 crore INR, derived from the sale of 17 works. Following closely is Arpita Singh, who achieved sales amounting to 9.9 crore INR, attributed to 18 works sold, and Zarina Hashmi, whose sales reached 6.3 crore INR from the sale of 33 works. In contrast, among the male artists, the top performers include Gaitonde, who secured sales worth 180.9 crore INR through the sale of 19 works, M.F. Husain, with sales valued at 137.1 crore INR from the sale of 183 works, and S.H. Raza, generating sales totaling 78.7 crore INR from 135 works sold.

Although there are interesting findings, it is important to note the continued under-representation of women in auction markets. Of the total number of artists in the Indian art auction market, 303 were male and 55 were female. This disparity resulted in male artists accounting for 84.6 percent of the total artist population in the market for the year 2020-21. Additionally, the data show that only two pre-modern female painters, Amrita Sher-Gil and Sunayani Devi, participated in auctions during this period.

While Contemporary art displays the highest number of female artists, the decline in their representation raises important questions about the challenges and opportunities faced by women in the art market. Further examination of this data may reveal valuable insights into the factors influencing gender disparities in the auction art market and the potential implications for women artists in the future.

4.3 Research Methodology

This research aims to undertake a complete analysis of price trends in the Indian art market and to investigate the influence of global financial and economic crises that

occurred between 2010 and 2020. Because art is a heterogeneous commodity, one of the most difficult issues in developing a price index for it is managing its various character. Price trends can be affected by variations in the quality of paintings introduced to the market over time, for example. Simply looking at overall sales history may give the impression that art prices are falling. However, a more extensive investigation that considers the quality of the artworks may provide a different image.

To address these complexities, the study employs the hedonic regression approach, which has previously been used by researchers such as Anderson (1974), Buelens and Ginsburgh (1993), Barre et al. (1994), Chanel et al. (1994), and Czujack (1997) to investigate price patterns in auctions for Western art. Additionally, Mok et al. (1993) have applied similar methods to explore the Chinese art market. The fundamental premise underlying the hedonic pricing approach is that commodities can be defined by their constituent attributes, and thus, the value of a commodity can be derived by summing up the estimated values of its constituent qualities. To apply the hedonic pricing approach successfully, certain conditions must be met, including the ability to disaggregate the composite good under examination into its constituent components and that these constituents possess an implied market value.

The current analysis employs the hedonic regression technique to establish the price of a "standardized painting" auctioned in any given year. This method involves conducting a regression analysis, in which the auction price of a painting is regressed against temporal dummies and a comprehensive set of parameters related to the artwork's individual qualities. These components include the artist's identity, creative style, proportions and medium of the painting, type of paint used, and other critical characteristics. The objective of the model is to account for the price fluctuations that can be attributed to these distinguishing features by incorporating them into the study.

The anticipated time dummies may be efficiently used as a price index using this analytical methodology. capturing and documenting the fluctuations in prices of standardized artworks over time. This index not only facilitates the quantification of price movements but also serves as a valuable tool for disentangling the impact of various attributes on art prices. By controlling for the diverse nature of art as a

commodity, the hedonic regression approach enables researchers to isolate the effects of individual factors on pricing trends. Consequently, this approach contributes to a more comprehensive and unbiased analysis of the underlying market dynamics and assists in discerning the nuances of art pricing patterns.

Table 4.1: Studies to calculate the Return of Art

S.No.	Year	Citation	Return
1	2002	Renneboog and van Houtte (2002)	Naïve price index
2	1974	Anderson (1974)	Repeat Sales Regression
3	1986	Baumol (1986)	Repeat Sales Regression
4	1990	Goetzmann (1990)	Repeat Sales Regression
5	1993	Locatelli, Pesando (1993)	Repeat Sales Regression
6	1999	Biey and Zanola (1999)	Repeat Sales Regression
7	2002	Mei and Moses (2002)	Repeat Sales Regression
8	1989	Frey and Pommerehne (1989)	Hedonic Regression
9	1993	Buelens and Ginsburgh (1993)	Hedonic Regression
10	1996	Chanel et al. (1996)	Hedonic Regression
11	1999	Seckin, Atukeren (1999)	Hedonic Regression
12	2002	Agnello (2002)	Hedonic Regression
13	2005	Worthington and Higgs (2005)	Hedonic Regression
14	2009	Campos and Leite Barbosa (2009)	Hedonic Regression
15	2009	Renneborg and Spaenjers (2009)	Hedonic Regression
16	2012	Higgs (2012)	Hedonic Regression
17	2008	Kräussl and van Elsland (2008)	2-step Hedonic approach
18	2009	Kraeussl., Wiehenkamp (2009)	2-step Hedonic approach

4.4 Data Analysis

4.4.1 Descriptive Statistics

Globally, the importance of fine art investment has expanded among financial institutions and investors alike (Mamarbachi, Day, & Favato 2008).

Modern Indian Art is classified as follows:

The majority of artworks falling under the contemporary Indian art category were produced during the early twentieth century up until the 1980s. Interestingly, during this period, there was no specific designation or term to categorize this art movement distinctly. Instead, modern Indian art often found itself featured in “mixed auctions” alongside antiquities and folk art until the late 1990s.

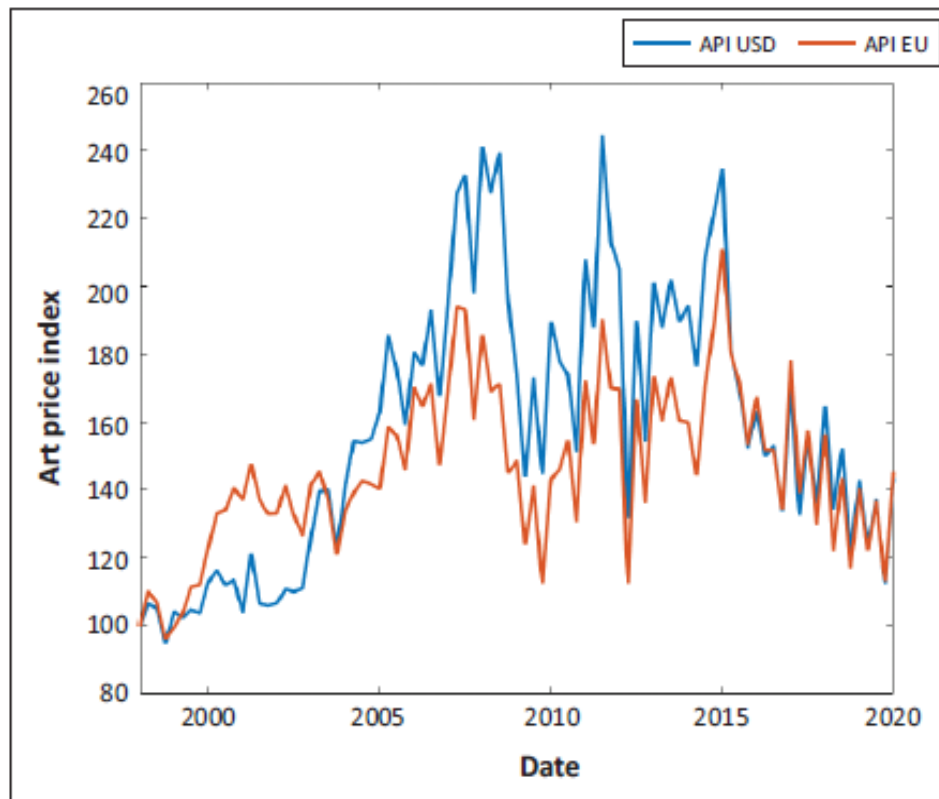
Notably, leading auction houses such as Christie’s and Sotheby’s did not regularly conduct dedicated auctions focused on modern Indian art prior to the early 2000s. Nevertheless, starting in 1995, art critics and historians gradually reached an agreement, acknowledging the importance of modern Indian art as a distinct and recognisable aesthetic movement. This acknowledgment marked a turning point, leading to a greater appreciation and recognition of the unique artistic expression and cultural significance of contemporary Indian art in the global art community.

Price Increase during 1995-2007: According to a study by Khaire and Wadhwani in 2010, The average auction price for an Indian painting climbed dramatically from \$6,000 in 1995 to \$44,000 in 2007. This period witnessed substantial growth and a surge in demand for modern Indian art.

4.4.1.1 Global Art Price Index in United States Dollars European Euros 2000–2020

The Global Art Price Index provides insights into the performance and trends of the art market over a specific period. The data derived from Artprice.com in 2020, as presented by Baur (2020), focuses on the European Euros and United States Dollars from the years 2000 to 2020. Here is an overview of the key findings and trends during this period:

Overall Market Performance: The Global Art Price Index reflects the general trajectory of the art market over the two-decade span from 2000 to 2020. It tracks the overall price movements of artworks and provides a comparative analysis of different currencies, including European Euros and United States Dollars.



Source: Data derived from Artprice.com 2020 (Baur, 2020)

Figure 4.1: Global Art Price Index in United States Dollars European Euros 2000–2020

Periods of Growth and Decline: The index highlights various periods of growth and decline within the art market during the specified timeframe. These fluctuations are influenced by a range of factors, including economic conditions, global events, art market trends, and the popularity of specific artists or art movements.

Market Resilience: Despite experiencing fluctuations, the art market has demonstrated resilience over the years. It has proven to be an asset class that can retain and increase value over time, attracting investors and collectors seeking long-term growth potential.

4.4.1.2 Geographic Distribution of Auction Houses by Countries

When considering the geographic distribution of auction houses with reference to India, several countries stand out as major players in the art auction market. While the

following list is not exhaustive, it highlights some prominent countries hosting significant auction houses:

India: In recent years, India has witnessed the growth of its own auction houses that specialize in Indian art. These include organisations like Saffronart, AstaGuru, and Pundole's. These Indian auction houses have played a vital role in promoting and showcasing Indian art domestically and internationally.

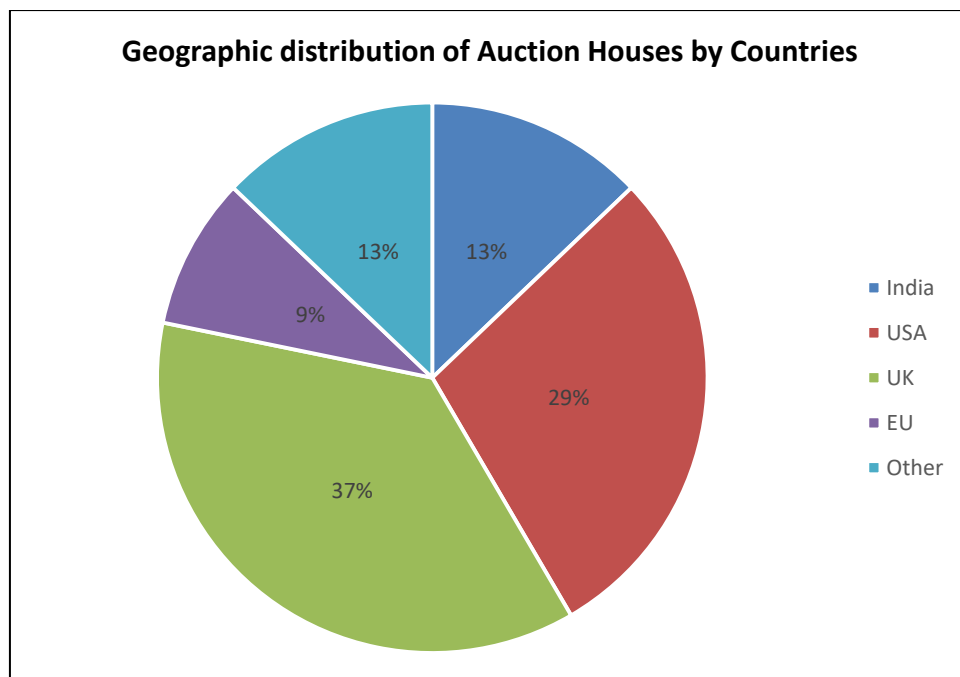
United Kingdom: London has historically been a major hub for the international art market, including Indian art. Established auction houses such as Sotheby's and Christie's have significant operations in London and conduct auctions featuring Indian art. These auction houses attract collectors and buyers worldwide, including India.

United States: New York is another prominent center for art auctions and has seen a growing interest in Indian art. Auction houses like Sotheby's, Christie's, and Bonhams host dedicated auctions featuring Indian art, attracting both Indian and international collectors.

Hong Kong: Hong Kong has emerged as a major art market in Asia and serves as a gateway to the Chinese and Southeast Asian markets. Auction houses like Sotheby's and Christie's hold auctions featuring Indian art in Hong Kong, catering to the growing demand from collectors in the region.

UAE: Dubai has become a hub for art auctions in the Middle East and has witnessed a rising interest in Indian art. Auction houses such as Christie's and Bonhams organize sales in Dubai that include Indian artworks, tapping into the strong art market in the region.

Germany: Cities like Berlin and Munich are home to several auction houses that occasionally feature Indian art in their sales. These houses, such as Grisebach and Ketterer Kunst, cater to both local and international collectors interested in Indian artworks.



Source: Hurun India Art List, 2022 compiled by Author (researcher)

Figure 4.2: Geographic Distribution of Auction Houses by Countries

It's imperative to note that the geographic distribution of auction houses can evolve over time, and other countries or regions may also host auctions featuring Indian art. Additionally, online platforms have gained significance, allowing for global participation and accessibility in the art market, including auctions featuring Indian artworks.

4.4.1.3 Over All Indian Art Trend based on Sales (2011 - 2022)

While analysing the data, the major points were observed as summarized.

Increased Global Recognition: The Indian art market is becoming increasingly attractive to international collectors. This is due in part to the growing recognition of the quality of Indian art, as well as the increasing availability of Indian art in international markets. Indian artists are gaining recognition on the international stage. Notable artists such as Subodh Gupta, Bharti Kher, and Jitish Kallat have achieved global acclaim, leading to higher demand for their works in international auctions and exhibitions. The most expensive Indian artwork sold at auction in 2022 was “Sita and Rama” by Amrita Sher-Gil, which sold for Rs.293 crores (\$36.4 million). In 2022, the Indian art market

generated a turnover of Rs.1,145.5 crores (\$144.3 million). This was an increase of 9% from the previous year. Artists such as Raja Ravi Varma, Tyeb Mehta, Francis Newton Souza, and Subodh Gupta have achieved international acclaim. This recognition has led to increased interest from collectors and institutions worldwide. The Indian art market reached a value of \$250 million in 2022, reflecting a steady increase from previous years. Online art sales in India increased by 20% in 2022.

Rising Prices: The Indian art market has witnessed a growth in prices over the years, especially during the early to mid-2000s. However, the market experienced a correction and a decline in prices following the global financial crisis in 2008. Since then, the market has shown some resilience, with fluctuations in prices for different artists and art movements.

Shift in Art Preferences: There has been a noticeable shift in art preferences among Indian collectors and buyers. Contemporary art has gained popularity, with artists exploring diverse mediums and styles. Traditional and folk-art forms also continue to hold a significant place in the market. Recent trends reflect that women artists are becoming increasingly prominent in the Indian art market, with their works commanding high prices. There has been an increase in the profile of women artists in the art world, which has led to an increased recognition of their work. Indian women artists, such as Nalini Malani, Pushpamala N, and Reena Saini Kallat, are now more popular in the art market.

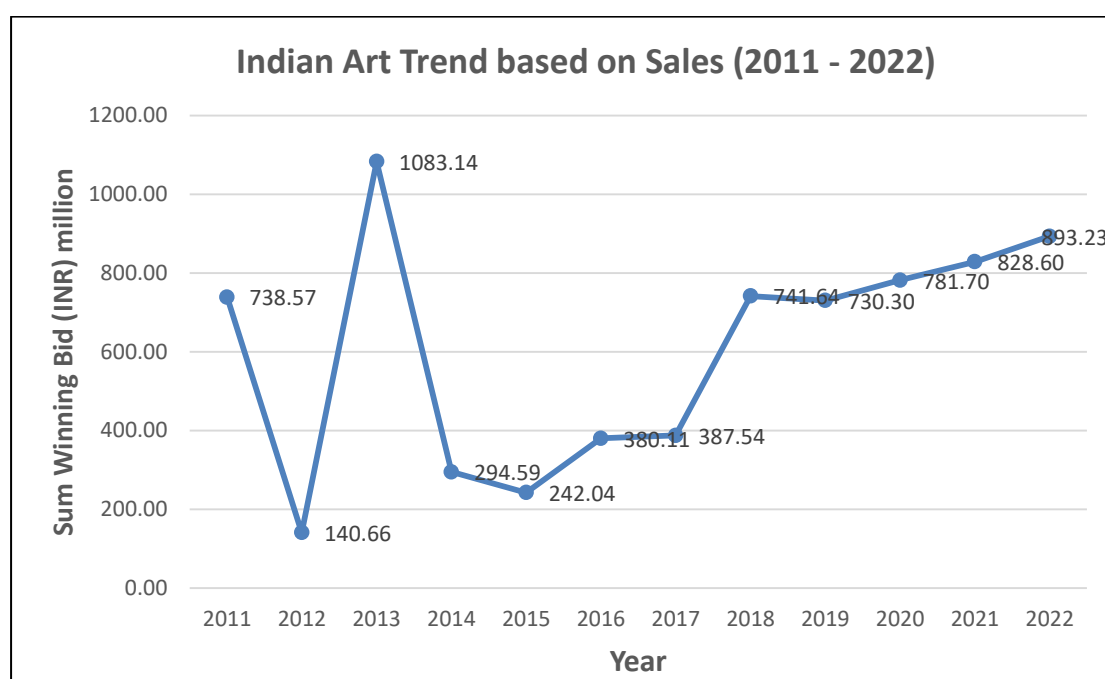
Emergence of Auction Houses: Indian auction houses like Saffronart and AstaGuru have played a significant role in promoting and auctioning Indian art. These platforms provide a space for collectors and art enthusiasts to acquire artworks and contribute to the growth of the Indian art market.

Indian Art Boom: The Indian art scene has seen considerable growth and recognition in recent years. Artists experimenting with various mediums, themes, and artistic styles have gained attention both domestically and internationally. The contemporary art market has attracted significant investment and interest from collectors and institutions.

Digital Transformation: The digitization of the art market has played a significant role in promoting Indian art. Online platforms and digital auctions have made Indian art more accessible to a global audience. This shift has allowed for greater transparency, convenience, and participation in the Indian art market. Technology integration in the art market has opened up new avenues for artists and collectors. Online art platforms, virtual exhibitions, and digital marketing have facilitated broader reach and accessibility, enabling artists to connect with a global audience. Online sales are becoming increasingly important in the Indian art market as more and more collectors are turning to the Internet to buy art. This is due to the convenience and affordability of online sales and the wider range of artworks available online. Some of India's most popular online art platforms include Saffronart, ArtBaaz, and Invaluable.

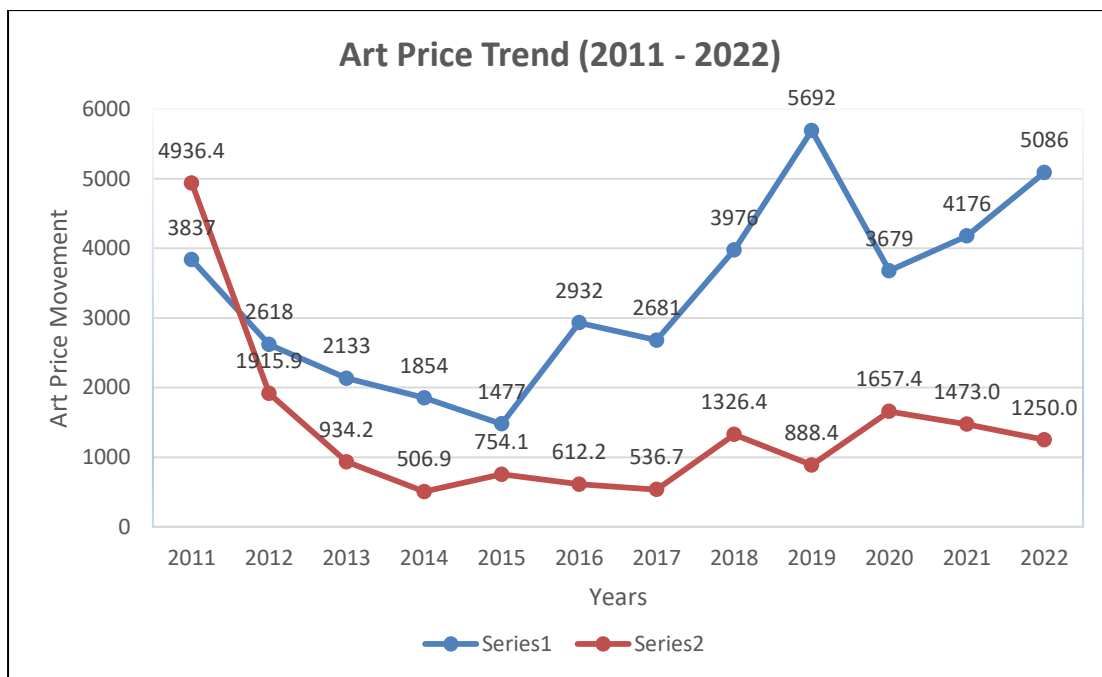
Increasing Investment Potential: Art is considered an alternative investment asset class in India. Investors are recognising the potential for significant returns in the long term. Art funds and private collectors actively participate in the market, increasing prices for select artists and artworks.

It's important to note that the art market fluctuates and changes over time.



Source: Data derived from saffronart.com 2022 compiled by Author (researcher)

Figure 4.3: Overall Indian Art Trend based on Sales (2011 - 2022)



Source: Data derived from saffronart.com 2022 compiled by Author (researcher)

Figure 4.4: Art Price Trend (2011 - 2022)

4.4.1.4 Compound Annual Growth Rate (CAGR) Trends in the Indian Art Market (2011-2022)

It's noteworthy that CAGR represents the average annual growth rate over a specific period and doesn't capture the individual variations within each year. Based on the provided CAGR (Compound Annual Growth Rate) data for the years 2011 to 2022 in the Indian art market, here is a summary of the CAGR trends for both Modern and Contemporary art:

Modern Art CAGR:

- Overall CAGR (2011-2022): 7.35%
- The CAGR for Modern art shows a mix of positive and negative growth rates over the years.
- The highest CAGR for Modern art was observed in 2019 at 48.42%, indicating significant growth during that year.

- The lowest CAGR for Modern art was observed in 2015 at -14.83%, indicating a decline in value during that year.
- The most recent available data shows a CAGR of 12.01% for Modern art in 2021 and a projected CAGR of 14.80% for 2022.

Contemporary Art CAGR

- Overall CAGR (2011-2022): 4.01%
- The CAGR for Contemporary art shows a mix of positive and negative growth rates over the years.
- The highest CAGR for Contemporary art was observed in 2019 at 38.94%, indicating substantial growth during that year.
- The lowest CAGR for Contemporary art was observed in 2015 at -7.78%, indicating a decline in value during that year.
- The most recent available data shows a CAGR of 9.08% for Contemporary art in 2021 and a projected CAGR of 10.98% for 2022.

Table 4.2: Compound Annual Growth Rate (CAGR) Trends (2011 - 2022)

CAGR (2011 - 2022)		
Year	CAGR Modern	CAGR Contemporary
Overall	7.35%	4.07%
2011	2.88%	-24.34%
2012	1.81%	20.03%
2013	7.47%	10.86%
2014	-4.95%	-4.56%
2015	-14.83%	-7.78%
2016	33.99%	14.39%
2017	10.31%	16.99%
2018	12.67%	-8.59%
2019	48.42%	38.94%
2020	2.47%	6.63%
2021	12.01%	9.08%
2022	14.80%	10.98%

Overall, both the Modern and Contemporary art segments exhibit positive overall CAGRs during the analyzed period. Modern art shows a higher overall CAGR of 7.35%, indicating relatively stronger growth compared to Contemporary art with an overall CAGR of 4.01%.

4.5 Construction of Indian Art Price Index (Hedonic Regression)

By constructing Art Price Index trying to explores the return on the paintings created by Indian modern and contemporary artist auctioned at Saffronart over the period 2011 to 2022 using the hedonic regression method. The index construction facilitates in probing the return on the art against traditional assets classes. It has been noticed that before deciding to include assets in a balanced investment portfolio, investors must be familiar with their risk and return parameters. When determining whether to incorporate art in an investing portfolio, investors must consider both the risk and the reward. In essence, the hedonic technique homogenizes paintings by taking quality changes into consideration through removal of the implicit price of the various attributes from the actual hammer price. The measurable and visible attributes instrumental in price valuation are extracted from the price, and the residual is an absolute time trend index of art prices stripped of other characteristics.

Indian Art Index computed with help of hedonic regression calculations is depicted in Table 4.3 covering the period 2011 to 2022. The sequence of standardized beta calculations helps in assessment of price movements and trends for Indian art, beta is the price of standardized painting equivalent to integration of specific characteristics of the painting. The price index is measure by approximate exponential value of log value of the auction painting with year 2010 as a base year. The price indices a graphically displayed in Figure 4.3. Since the data pertains to a moderately short duration the returns are extremely volatile. This does not come as a surprise as the financial market across the world were exhibiting similar fluctuations over this period due to the different financial and economic crisis. The returns were dramatically escalating till year 2014 with 21.18 percent growth registered for 2014. There is a mild decline in 2015 owing to ramifications of global ill effects which was followed consistent falling returns and the tremors are felt till date. There were trifling ups and downs over the

period following depression, however, year 2015 was an exception as it marked fifteenth anniversary of Saffronart. China quickly rebounded, and market turnover in 2016 topped that in 2014, indicating a significant market resurgence. In 2012 and 2015, there were two notable drops in overall sales and average artwork prices due to economic insecurity and political uncertainty. However, the market experienced a significant decline in 2015, but the average price of artwork sold rebounded the following year, reflecting a robust market trend, thanks to an increase in overall turnover.

```
>library(readr)
```

```
>Artdata<-read_excel('C:/users/AND/desktop//HI_100/artdata.xlsx')
```

```
>view(artdata)
```

```
>lm(dependent_variable~independent_variable, data = dataset)
```

```
lmmodel<-lm(winningbid~area+modern+contemporary+y2011+y2012+y2013+y2014+y2015+y2016+y2017+y2018+y2019+y2020+y2021+y2022, method="qr", model=TRUE)
```

Table 4.3: Indian Art Price Index

Year	Coefficient	Index	Final Index
Y2010	0	1	100.00
Y2011	-0.04886	0.952314	95.23
Y2012	-0.61623	0.539976	54.00
Y2013	-0.93076	0.394254	39.43
Y2014	-1.60425	0.20104	20.10
Y2015	-2.13091	0.118729	11.87
Y2016	-0.525	0.591555	59.16
Y2017	-0.92092	0.398153	39.82
Y2018	-0.21548	0.806154	80.62
Y2019	-0.83244	0.434987	43.50
Y2020	-0.23244	0.792597304	79.25
Y2021	-.562.27	0.56991389	56.99
Y2022	-624.97	0.535277487	53.52

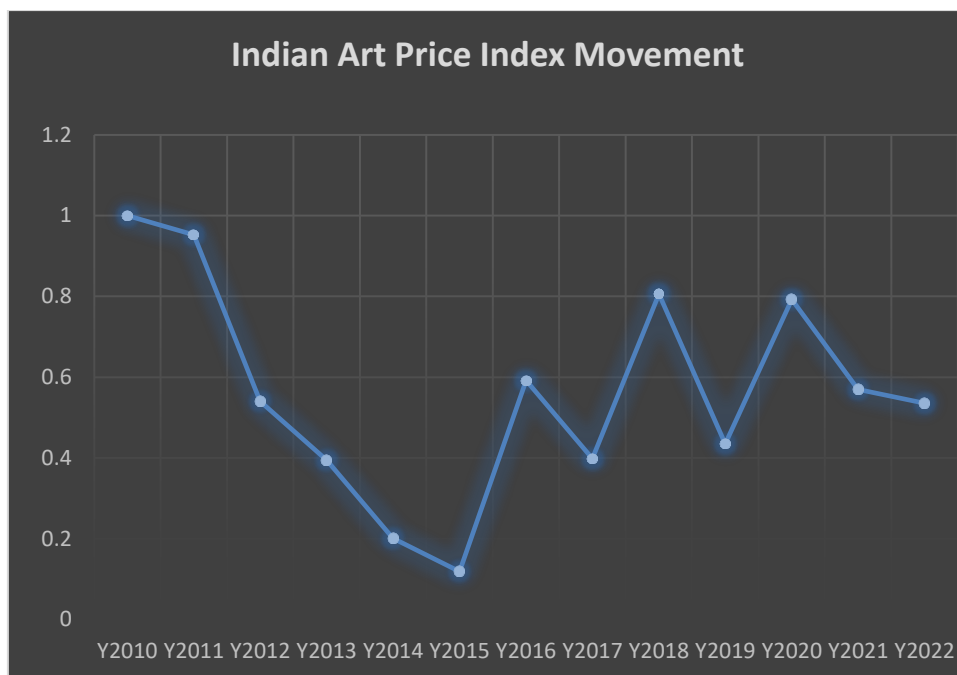


Figure 4.5: Indian Art Price Index

Based on the provided art market index data for the years 2010 to 2022, here is a summary of the trends:

Overall Trend:

- The art market index started at 100 in 2010.
- It declined gradually from 2010 to 2015, reaching a low of 11.87 in that year.
- From 2016 onwards, the index began to increase significantly, showing a recovery and growth in the art market.

Recovery and Growth:

- The art market index experienced a significant recovery starting in 2016, with a sharp increase to 59.16.
- The index continued to show growth in subsequent years, reaching its highest point at 80.62 in 2018.
- However, there was a slight decline in 2019 to 43.5, followed by a recovery to 79.25 in 2020.

Fluctuations:

- The art market index exhibits fluctuations throughout the analyzed period.
- Some years experienced significant declines, such as the sharp drop from 2010 to 2015.
- Other years showed notable increases, particularly the strong recovery and growth from 2016 to 2018.

Recent Trends:

- In more recent years, the art market index showed some volatility.
- There was a decline to 56.99 in 2021, followed by a further decrease to 53.52 in 2022.

4.6 Concluding Remarks

The modern Indian art market is still in its early stages, with Indian artists' work being recognized as part of an autonomous creative movement until roughly 1995. However, data provided by Artprice.com, the world leader in art market statistics, demonstrates that Indian painters have consistently ranked among the top 500 artists in the world for the previous 10 years. Artprice.com has 30 million prices and indexes for 700,000 artists worldwide. It is beneficial to utilize price auction data for Indian artists' works in order to comprehend the trend established by Indian art and to establish that Indian art may also be regarded a diversification tool for an investment portfolio. As a result, this study used sales made by Saffronart, a major auctioneer of Indian art, through several auctions from 2010 to 2022 to estimate an art price index for this time period in order to analyze the pattern.

Upon meticulous consideration of the inherent attributes intrinsic to the artworks subjected to auction, the investigation reveals a substantial upswing in prices spanning the period from 2000 to 2006/2008, followed by a pronounced decline. Although systematic examinations of trends within the Indian art industry have been infrequent, insights gleaned informally from experts within the art market indicate that the zenith of aggregate painting valuations occurred around 2007-2008. Subsequently, a discernible descent in market performance ensued, although recent indicators suggest a measure of

stabilization. Nevertheless, these empirical observations have thus far undergone insufficient scrutiny with due regard to the distinctive characteristics distinguishing one artwork from another.

Recognizing the inherent diversity characterizing artworks as commodities, the analytical approach embraces hedonic regression techniques to standardize their prices. This methodological framework, well-established in the domain of Western art price analysis, represents a pioneering empirical endeavor aimed at elucidating pricing dynamics within the Indian art market. Historically, the analysis of paintings has predominantly relied on anecdotal narratives, often disregarding the inherent heterogeneity among individual artworks.

The investigation into pricing dynamics within the emerging Indian art market holds substantial importance, given that Indian art embodies the creative expression of the world's imminent most populous nation. To facilitate this analysis, an art price index was formulated, utilizing data obtained from Saffronart, a prominent auction house specializing in Indian art. This dataset spans the timeframe from 2000 to 2013. Employing the methodological approach of hedonic regression, the objective was to normalize the pricing of artworks, acknowledging the multifaceted attributes intrinsic to each unique artistic creation.

It is noteworthy that art markets are renowned for their intrinsic volatility, particularly when scrutinized over shorter time intervals. Consequently, while short-term projections of returns on art investments may manifest volatility, long-term return rates often exhibit resemblances to those observed within conventional financial asset classes such as equities and bonds. Numerous studies within the realm of art markets have projected return rates ranging from 2.5% to 5% [Ashenfelter and Graddy 2002]. Notably, the Indian art market presents a higher anticipated rate of return, spanning between 5% and 9%, contingent on factors such as the categorization of the artwork as modern or contemporary and its involvement in substantial or absolute auctions. Nevertheless, given the recent ascendancy of the Indian art market and its current trajectory marked by descending prices, there exists conjecture that long-term returns

within the Indian art domain may eventually stabilize at levels commensurate with those observed in other art markets.

4.7 Conclusion: Causes and Consequences of Art Market Trends

The trajectory of the Indian art market over the past two decades reveals a dynamic interplay between macroeconomic shifts, collector behavior, and institutional engagement. The initial boom in the early 2000s was largely driven by a combination of rising disposable income, economic liberalization, and the global recognition of Indian modern artists. Auction houses such as Sotheby's and Christie's catalyzed international exposure, while the emergence of domestic platforms like Saffronart democratized access and liquidity in the art market. However, this growth was interrupted by the 2008 global financial crisis, which triggered sharp declines in both prices and volumes, highlighting the market's vulnerability to global capital shocks. The resurgence witnessed post-2016, including during and after the COVID-19 pandemic, reflects a resilient shift toward digital sales, increased participation by younger and first-time buyers, and the expansion of ultra-high-net-worth individuals in India. These trends suggest that art is increasingly perceived not just as a cultural good but as a viable alternative asset. The consequences of these shifts include greater price volatility, broader market democratization, and the growing need for transparent valuation mechanisms and art price indices. If these trends continue, they may contribute to art's formal recognition as a mainstream financial instrument and shape policy, infrastructure, and education around art investing in India.

Appendix

Table 4.4: Detailed Statistics of Sales Prices Artist Category wise

Category	Count of Artist	Category wise percentage	Sum of Winning Bid (INR)	Percentage of Winning Bid (INR)	Average of Winning Bid (INR)	Standard Deviation	Max of Winning Bid (INR)
Modern	3550	68.33%	5,033,238,674.00	82.64%	1,421,417.30	2,179,350.01	138,720,000.00
Contemporary	1645	31.67%	1,057,615,514.00	17.36%	644,494.52	5,457,805.15	39,420,000.00
Grand Total	5195		6,090,854,188.00		1,175,386.76	4,689,024.15	138,720,000.00

Table 4.5: Top 10 Artist as per the Turnover in 2022

Rank	Name	Turnover (INR)	Percentage	Work of Art (Highest Value) (INR)
1	Anish Kapoor	206,000,000.00	31%	45,000,000.00
2	Krishen Khanna	90,000,000.00	14%	28,000,000.00
3	Rameshwar Broota	88,000,000.00	13%	39,000,000.00
4	Arpita Singh	76,000,000.00	12%	53,000,000.00
5	Jogen Chawdhury	61,000,000.00	9%	20,000,000.00
6	Sakti Burman	43,000,000.00	7%	6,000,000.00
7	Subodh Gupta	27,000,000.00	4%	5,000,000.00
8	Anjolie Ela Menon	23,000,000.00	4%	7,000,000.00
9	Nalini Malini	22,000,000.00	3%	7,000,000.00
10	Raqib Shaw	20,000,000.00	3%	13,000,000.00

Source: Hurun India Art List, 2021

Table 4.6: Top 25 Modern Artworks (Based on Winning Bid)

S.No.	Year	Date	Artist Name	Title	Medium	Size (Inch)	Year	Estimate (INR)	Winning Bid (INR)	S.I.R (on sale)
1	2021	11-Mar-21	V S Gaitonde	Untitled	Oil on canvas	50 x 80 in	1961	Rs 25,00,00,000 - 35,00,00,000	Rs. 399,800,000	99950.00
2	2019	28-Mar-19	S H Raza	Jaipur	Acrylic on canvas	48 x 48 in	1976	Rs 13,60,00,000 - 20,40,00,000	Rs. 138,720,000	60208.33
3	2012	20-Sep-12	Tyeb Mehta	Falling Figure with Bird	Oil on canvas	59 x 47 in	1988	Rs 7,95,00,000 - 10,60,00,000	Rs. 96,301,000	34728.09
4	2019	13-Jun-19	V S Gaitonde	Untitled	Oil on canvas	29.75 x 24.75 in	1958	Rs 4,00,00,000 - 6,00,00,000	Rs. 95,220,000	129320.09
5	2015	11-Jun-15	S H Raza	Earth	Acrylic on canvas	39 x 78.5 in	1986	Rs 6,00,00,000 - 8,00,00,000	Rs. 77,553,071	25331.72
6	2019	28-Mar-19	Raja Ravi Varma	Hanuman`s Discourse	Oil on canvas	20.25 x 16.75 in	Circa 1870	Rs 4,00,00,000 - 6,00,00,000	Rs. 73,440,000	216517.41
7	2011	22-Sep-11	Tyeb Mehta	Untitled	Oil on canvas	59 x 47 in	1981	Rs 4,60,00,000 - 6,90,00,000	Rs. 71,990,000	25961.05
8	2018	6-Dec-18	Bhupen Khakhar	Untitled (The Bathing Ghat)	Oil on canvas	68.25 x 44.75 in	1994	Rs 2,50,00,000 - 3,50,00,000	Rs. 62,100,000	20332.74
9	2018	14-Jun-18	V S Gaitonde	Untitled	Oil on canvas	51.5 x 37.25 in	1965	Rs 5,28,00,000 - 7,92,00,000	Rs. 59,400,000	30963.71
10	2011	16-Jun-11	Tyeb Mehta	Untitled (Kali)	Acrylic on canvas	30 x 24 in	1998	Rs 1,25,00,000 - 1,75,00,000	Rs. 57,296,500	79578.47
11	2020	8-Dec-20	S H Raza	Jodhpur	Acrylic on canvas	48 x 48 in	1976	Rs 4,74,50,000 - 6,20,50,000	Rs. 48,180,000	20911.46
12	2016	9-Jun-16	Amrita Sher-Gil	Untitled (Zebegeny Landscape)	Oil on board	24 x 16 in	1931	Rs 3,96,00,000 - 5,28,00,000	Rs. 47,520,000	123750.00
13	2019	13-Jun-19	F N Souza	Untitled (Hampstead)	Mixed Media on canvas	42 x 34 in	1964	Rs 1,72,50,000 - 2,41,50,000	Rs. 45,540,000	31890.76

S.No.	Year	Date	Artist Name	Title	Medium	Size (Inch)	Year	Estimate (INR)	Winning Bid (INR)	S.I.R (on sale)
14	2014	19-Jun-14	S H Raza	Bhartiya Samaroh	Acrylic on canvas	59 x 59 in	1988	Rs 4,72,00,000 - 5,90,00,000	Rs. 43,247,000	12423.73
15	2017	7-Jun-17	Tyeb Mehta	Falling Figure	Oil on canvas	40.75 x 29.75 in	1965	Rs 2,00,00,000 - 3,00,00,000	Rs. 42,720,000	35238.44
16	2016	1-Dec-16	Akbar Padamsee	Untitled	Oil on canvas	42 x 85.5 in	1994	Rs 3,50,00,000 - 4,50,00,000	Rs. 42,000,000	11695.91
17	2020	8-Dec-20	Jehangir Sabavala	Untitled	Oil on canvas	45 x 45 in	1992	Rs 2,00,00,000 - 3,00,00,000	Rs. 42,000,000	20740.74
18	2018	14-Jun-18	Raja Ravi Varma	Untitled (Shiva)	Oil on canvas	29.5 x 21.5 in	1903	Rs 3,00,00,000 - 5,00,00,000	Rs. 36,000,000	56759.95
19	2013	12-Dec-13	S H Raza	Untitled	Acrylic on canvas	47 x 47 in	1982	Rs 2,70,00,000 - 3,30,00,000	Rs. 34,065,000	15421.00
20	2013	12-Dec-13	S H Raza	Untitled	Acrylic on canvas	47 x 47 in	1982	Rs 2,70,00,000 - 3,30,00,000	Rs. 34,065,000	15421.00
21	2012	20-Sep-12	Amrita Sher-Gil	Untitled (Zebegény Landscape)	Oil on board	24 x 16 in	c. 1931	Rs 3,18,00,000 - 4,24,00,000	Rs. 32,489,000	84606.77
22	2018	14-Jun-18	Akbar Padamsee	Untitled	Oil on canvas	43.25 x 86.25 in	1994	Rs 2,75,00,000 - 3,75,00,000	Rs. 32,340,000	8669.51
23	2019	10-Dec-19	S H Raza	Paysage	Oil on canvas	44.75 x 57.5 in	1960	Rs 2,45,00,000 - 3,15,00,000	Rs. 32,340,000	12568.38
24	2012	20-Jun-12	S H Raza	Encountre	Acrylic on canvas	47 x 47 in	1985	Rs 2,00,00,000 - 2,50,00,000	Rs. 31,590,000	14300.59
25	2012	20-Jun-12	V S Gaitonde	Untitled	Oil on canvas	60 x 40 in	1971	Rs 2,70,00,000 - 3,78,00,000	Rs. 28,485,000	11868.75

Table 4.7: Top 25 Contemporary Artworks (Based on Winning Bid)

S.No.	Year	Date	Artist Name	Title	Medium	Size (Inch)	Year	Estimate (INR)	Winning Bid (INR)	S.I.R (on sale)
1	2020	8-Dec-20	Manjit Bawa	Untitled (Ganesh)	Oil on canvas	54 x 44.5 in	1998	Rs 1,82,50,000 - 2,55,50,000	39,420,000	16404.49
2	2018	14-Jun-18	Manjit Bawa	Untitled	Oil on canvas	69.5 x 86 in	2005	Rs 3,30,00,000 - 4,62,00,000	33,660,000	5631.59
3	2020	8-Dec-20	Manjit Bawa	Untitled	Oil on canvas	34 x 28.25 in		Rs 80,00,000 - 1,00,00,000	31,200,000	32483.08
4	2018	6-Dec-18	Manjit Bawa	Untitled	Oil on canvas	43.75 x 52.75 in	Circa 1994	Rs 1,72,50,000 - 2,41,50,000	27,738,000	12019.17
5	2018	6-Dec-18	Manjit Bawa	Untitled	Oil on canvas	27.75 x 24.5 in	2004	Rs 48,30,000 - 62,10,000	12,006,000	17659.13
6	2012	20-Jun-12	Subodh Gupta	Untitled	Oil on canvas	66 x 90 in	2007	Rs 97,20,000 - 1,18,80,000	11,664,000	1963.64
7	2012	19-Dec-12	Manjit Bawa	Untitled	Oil on canvas	59.5 x 45.5 in	1976	Rs 65,00,000 - 85,00,000	11,628,000	4295.13
8	2013	25-Sep-13	Ranbir Kaleka	Crossings 2	Painted canvases	75 x 98 in	2005	Rs 91,50,000 - 1,22,00,000	10,980,000	1493.88
9	2011	16-Jun-11	Manjit Bawa	Nayika	Oil on canvas	54 x 45 in	1993	Rs 85,00,000 - 1,05,00,000	10,821,908	4453.46
10	2013	20-Jun-13	Subodh Gupta	Untitled	Oil on canvas	66 x 89 in	2007	Rs 67,20,000 - 84,00,000	9,408,672	1601.75
11	2013	20-Jun-13	Subodh Gupta	Untitled	Oil on canvas	66 x 89 in	2007	Rs 67,20,000 - 84,00,000	9,408,672	1601.75
12	2011	17-Mar-11	Subodh Gupta	Untitled	Oil on canvas	65 x 89.5 in	2005	Rs 80,00,000 - 1,00,00,000	9,209,200	1583.02
13	2018	14-Jun-18	Thota Vaikuntam	Untitled	Oil on canvas	60 x 288 in	2012-13	Rs 99,00,000 - 1,32,00,000	8,712,000	504.17

S.No.	Year	Date	Artist Name	Title	Medium	Size (Inch)	Year	Estimate (INR)	Winning Bid (INR)	S.I.R (on sale)
14	2014	4-Dec-14	Subodh Gupta	Untitled	Oil on canvas	65.5 x 89 in	2007	Rs 90,00,000 - 1,20,00,000	8,640,000	1482.12
15	2020	8-Dec-20	Thota Vaikuntam	Untitled	Acrylic on canvas	47.5 x 71.25 in	2012	Rs 40,00,000 - 50,00,000	8,400,000	2481.99
16	2011	3-Feb-11	Subodh Gupta	Untitled	Oil on canvas	65.5 x 89.5 in	2006	Rs 66,00,000 - 88,00,000	8,096,000	1381.04
17	2011	17-Mar-11	Rameshwar Broota	Traces of Man - The Unknown-Soldier - I	Oil on canvas	94.5 x 47 in	1999	Rs 70,00,000 - 90,00,000	8,055,520	1813.69
18	2013	25-Sep-13	Atul Dodiya	Gargoyle	Mixed Media	108 x 72 in	2002	Rs 61,00,000 - 91,50,000	7,869,000	1011.96
19	2011	9-Nov-11	Subodh Gupta	Untitled	Oil on canvas	65.5 x 89.5 in	2006	Rs 48,00,000 - 72,00,000	7,200,000	1228.20
20	2011	13-Dec-11	Rameshwar Broota	Sewadar	Oil on canvas	54.5 x 54.5 in	1972	Rs 55,00,000 - 65,00,000	7,200,000	2424.04
21	2017	7-Jun-17	Subodh Gupta	Sat Samunder Par (9)	Oil on canvas	65.25 x 89.75 in	2003-04	Rs 60,00,000 - 80,00,000	7,104,000	1213.08
22	2014	19-Jun-14	Jitish Kallat	Untitled (Eclipse)	Oil on canvas	78 x 138 in	2009	Rs 70,80,000 - 1,06,20,000	6,726,000	624.86
23	2017	7-Dec-17	Manjit Bawa	Untitled	Oil on canvas	25.5 x 23.5 in	2002	Rs 44,80,000 - 57,60,000	6,720,000	11214.02
24	2018	14-Jun-18	Subodh Gupta	Untitled	Oil on canvas	65.5 x 89.75 in	2005	Rs 60,00,000 - 80,00,000	6,594,000	1121.69
25	2011	13-Dec-11	Sudhir Patwardhan	Untitled	Acrylic on canvas	71.5 x 96 in	2006	Rs 25,00,000 - 35,00,000	6,450,000	939.69

CHAPTER 5

COMPARATIVE ANALYSIS OF INDIAN ART AS AN INVESTMENT: DIVERSIFYING THE PORTFOLIO

5.1 Introduction

For investors seeking to improve their portfolios, diversification has always been a key objective. While classic investment vehicles like equities and gold have traditionally been preferred for diversity, the art market has arisen as a fascinating alternative investment choice. The objective of this study is to examine and compare the potential of Indian art as an investment instrument to equities and gold and investigate its function in diversifying investment portfolios.

In recent years, the Indian art industry has undergone significant growth and evolution, attracting the attention of both domestic and international investors. Leveraging its profound cultural heritage and multifaceted diversity, Indian art offers a distinctive investment prospect that amalgamates aesthetic appreciation with the potential for financial returns. Through a comparative analysis that juxtaposes Indian art against conventional financial avenues such as equities and gold, the objective is to undertake a comprehensive evaluation of its merits and potential drawbacks as an investment instrument.

Stocks and gold are two essential components of the financial market. Stocks enable investors to engage in the expansion and success of numerous enterprises spanning diverse industries, providing liquidity, diversity, and capital appreciation potential. On the other hand, gold is often viewed as a safe haven asset that serves as a store of value during times of economic uncertainty and inflation. It guarantees stability and protects against market volatility.

This study conducts a comprehensive analysis of the risk-return characteristics intrinsic to Indian art, equities, and gold. This examination entails an investigation of historical performance, volatility patterns, and correlation dynamics within these asset categories. Furthermore, an exploration of the factors influencing investment decisions is

undertaken, encompassing considerations of investor preferences, prevalent market conditions, and regulatory frameworks. The overarching aim is to offer insights into the prospective advantages and drawbacks associated with Indian art investments relative to equities and gold, employing a comparative analytical framework that elucidates the potential for diversification.

The conclusions of this study will be useful to investors, portfolio managers, and people looking to diversify their financial portfolios. The research will add to current knowledge about the Indian art market and its feasibility as an investment asset class. It will also highlight the importance of alternative investments in diversification plans, broadening the variety of investment alternatives beyond established outlets.

The following sections of this research will systematically examine the attributes of Indian art, equities, and gold as investment vehicles. This analysis will entail a comprehensive exploration of their historical performance, inter-asset correlations, and potential contributions to portfolio diversification. Furthermore, an investigation into the determinants shaping investment decisions will be conducted, and this inquiry will be supplemented with relevant case studies and examples to enhance comprehension of the subject matter.

5.2 The Art of Investing: Understanding the Dynamics of Art Investments

Art is a form of creative expression with significant cultural and aesthetic value. Many individuals choose to invest in art to diversify their investment portfolios. Diversification refers to allocating investments across various asset classes to reduce risk. According to PricewaterhouseCoopers (PwC), art can be considered an alternative investment asset class that offers potential diversification benefits to traditional portfolios (PwC, 2021). Integrating art into an investing portfolio has the potential to mitigate the impact of market fluctuations on investors. Additionally, Art investments possess the capacity to generate capital appreciation over time, as the value of certain artworks can appreciate significantly (PwC, 2021).

The art market has gained popularity as an alternative investment option, evident from the rising prices seen at art auctions, the emergence of new private investment funds,

and the development of analytical tools for assessing art market trends (PwC, 2021). Art creations are no longer solely viewed as collectible objects; they now serve as tangible assets utilized in trade and financial transactions (Art Brand, 2007).

Art investment started back in 17th century, when affluent European families adopted a simple wealth allocation strategy, dividing their wealth equally between stocks, bonds, and securities; real estate; and investments in art, precious metals, gemstones, and other valuable items (Makslien, 2007). During this time, the Netherlands experienced its first significant art boom, coinciding with the country's global prominence in both trade and art. Dutch paintings held the highest value in the world even a century later, establishing the principle of "name buying," which continues to influence the art market to this day.

Art auctions rose to popularity in the late nineteenth and early twentieth centuries, slowly increasing their influence over the art market to unprecedented levels in the modern age. The twentieth century saw important events that had an influence on the art market, such as two world wars, the 1929-1933 economic crisis, and the Cold War. These historical occurrences left their mark on the art market's dynamics and contributed to its evolution over time.

These historical events and societal and economic changes have shaped the art market dynamics. The art market has evolved into a complex ecosystem influenced by factors such as changing tastes and preferences of collectors, market demand and supply dynamics, economic conditions, and geopolitical factors. Understanding these events' historical context and impact is crucial for comprehending the present-day art investment landscape.

In the realm of academic research pertaining to art investments, it is imperative to scrutinize historical factors, conduct an analysis of temporal trends and patterns, and evaluate their influence on the evolution of the art market. The exploration of historical development and the examination of pivotal events that have molded the art market provide valuable insights into the determinants governing art investment behaviors and outcomes.

However, it is important to note that the art market, like any investment market, is subject to volatility, risks, and uncertainties. Therefore, conducting thorough research, utilizing analytical tools, and considering expert opinions are crucial for making informed decisions in art investment.

5.2.1 Risks Associated with Art Investments

While art has emerged as an attractive alternative asset class offering diversification benefits, it is imperative to recognize the distinct risks associated with investing in various categories of art. These risks differ considerably from those associated with traditional financial instruments like equities or gold.

Liquidity Risk:

Art is generally an illiquid asset. Unlike stocks or bonds that can be sold on regulated exchanges within seconds, artworks require a significantly longer time to sell, and matching buyers may be difficult—particularly during market downturns (Campbell, 2008).

Valuation Risk:

The valuation of artworks is often subjective and opaque. Prices are influenced by factors such as artist reputation, provenance, and market sentiment, rather than objective financial metrics. Contemporary art, in particular, can display high volatility due to speculative pricing (Candela & Scorcu, 1997).

Market Volatility and Trend Dependency:

Art prices are highly sensitive to collector preferences, cultural trends, and global economic shifts. While modern art benefits from historical performance data, contemporary art is often driven by ephemeral popularity, making it more vulnerable to price bubbles (Renneboog & Spaenjers, 2013).

Authenticity and Provenance Risk:

The risk of acquiring forgeries or works with disputed provenance remains a concern in the art market. Misrepresentation can lead to financial and legal consequences. Lack of standardized certification processes increases this risk (Frey & Pommerehne, 1989).

Regulatory and Taxation Uncertainty:

The art market is underregulated in many jurisdictions, and taxation policies for art sales, capital gains, and inheritance vary widely. This regulatory ambiguity may negatively impact returns or introduce unforeseen legal obligations (Velthuis, 2011).

Conservation and Maintenance Costs:

Artworks, especially oil paintings and older pieces, require climate-controlled environments, periodic restoration, and insurance, leading to considerable ongoing expenses (Korteweg et al., 2016).

Concentration Risk:

Art portfolios tend to be highly concentrated, as investors typically acquire fewer but high-value works. This exposes the portfolio to specific artists or styles, amplifying the impact of market movements within niche segments (Goetzmann, 1993).

Economic and Cyclical Risk:

Art investments, particularly in luxury and contemporary categories, are sensitive to macroeconomic trends. During periods of recession or uncertainty, demand may contract sharply, causing price corrections (Agnello, 2002).

Therefore, despite its potential for long-term appreciation and low correlation with traditional assets, art investment demands rigorous due diligence. Investors must consider authentication, diversification across artist categories, professional storage, and an extended time horizon to mitigate these risks effectively.

5.3 Portfolio Optimization by Art Investments

Diversifying one's portfolio is an essential tactic employed by investors to mitigate risk and maximise returns. Diversification, as defined by Tobin (1958), entails the allocation of investments across various asset classes, including equities, bonds, real estate, and commodities, with the intention of mitigating the effects of investment volatility. Harry Markowitz, a Nobel laureate in economics, introduced the concept of diversification as an effective method for reducing portfolio risk (Markowitz, 1952). By diversifying their portfolios, investors can benefit from the different risk-return characteristics of various

assets. For instance, In times of economic deceleration, certain assets like government bonds or defensive stocks may demonstrate more stability, while other assets like high-growth stocks may provide higher returns during favorable market conditions. The principle behind diversification is to create a balance that minimizes the portfolio's overall risk while seeking to maximize potential returns.

The advantages of diversifying one's portfolio are extensively proven in financial literature. Brinson, Hood, and Beebower (1986) discovered that asset allocation, including diversification across several asset classes, had a considerable influence on investment portfolio performance. The study discovered that asset allocation decisions account for more than 90% of the variance in the returns of institutional portfolios, emphasizing the need of diversification (Brinson et al., 1986). Furthermore, diversity can improve risk-adjusted returns by potentially lowering portfolio volatility. Investors can acquire a more efficient risk-return tradeoff by considering assets with minimal correlation with one another (Lhabitant, 2013).

Nevertheless, diversification by itself does not ensure profits or provide a hedge against losses. The capacity of the investor to discover assets with low correlations and form a well-balanced portfolio is critical to diversification success. Diversification's success is also determined by the investor's risk tolerance, investment goals and time frame (Elton et al., 2014). To maintain the correct asset allocation and adjust for changes in market circumstances or the investor's financial goals, regular portfolio monitoring and periodic rebalancing are required. Additionally, diversification should not be limited to a single dimension, such as asset class diversification, but should also consider factors like geographical diversification, industry diversification, and investment style diversification (Elton et al., 2014).

Portfolio diversification with stocks and gold is a risk-reduction approach that potentially enhance returns by combining assets with various risk-return profiles. Stocks are typically associated with higher returns but also higher volatility, Gold is commonly seen as a secure investment that provides stability during times of market uncertainty. Research has shown that combining stocks and gold in a portfolio can offer diversification benefits. For example, a study by Baur and Lucey (2010) examined the

relationship between gold and stock markets across 15 countries. The study found that gold can act as a diversifier for equity investments, as it exhibited a negative correlation with stock returns during times of financial distress (Baur & Lucey, 2010). This negative correlation suggests that gold can potentially offset losses incurred by equity investments during market downturns. Consequently it reduces the volatility of the portfolio.

The diversification benefits of including gold in a portfolio alongside stocks have also been highlighted in other studies. A research paper by Lucey, O'Connor, and Voronkova (2008) analyzed the benefits of adding gold to equity portfolios in different economic conditions. The findings indicated that gold had a low correlation with global stock markets, particularly during periods of financial crisis and high inflation (Lucey et al., 2008). The authors concluded that incorporating gold in investment portfolios can be an effective strategy to enhance diversification and reduce downside risk, especially when economic conditions are unfavorable. Furthermore, gold's historical track record as a store of value and hedge against inflation has made it an attractive asset for investors seeking to diversify their equity exposures (Lucey et al., 2008).

It is crucial to acknowledge that diversifying one's portfolio with stocks and gold has the ability to reduce risk. However, the efficacy of this approach may differ based on variables such as market conditions, the investor's risk tolerance, and investing objectives. Research suggests that the optimal allocation to gold in a portfolio may differ for each investor based on their individual circumstances. For instance, a study by Baur and McDermott (2010) examined the optimal allocation to gold in portfolios for different levels of risk aversion. The study found that risk-averse investors may benefit from a higher allocation to gold, as it provides a hedge against downside risk (Baur & McDermott, 2010). However, less risk-averse investors may prefer a smaller allocation to gold, as its returns tend to be lower compared to stocks over the long term. Hence, it is imperative for investors to meticulously evaluate their risk profiles and seek expert guidance when deciding on the optimal distribution of equities and gold in their investment portfolios.

Correlation is important in portfolio diversification as it enables investors to understand the link between different assets in their portfolios. Correlation quantifies the extent to which two or more variables exhibit a relationship with each other. In the context of investment portfolios, the correlation between several asset classes, such as stocks, bonds, and art, can affect the portfolio's overall risk and return characteristics. According to Brooks, Chen, and Zeng (2019), art has little correlation with traditional asset classes such as stocks and bonds. This low connection implies that art investments might benefit from diversification because market swings may not have a direct impact on their performance in other asset classes (Brooks, Chen, & Zeng, 2019). Nevertheless, it is imperative to bear in mind that correlation is a dynamic measure that can vary over the years, underscoring the significance of ongoing portfolio monitoring and management.

5.4 Research Methodology

Correlation is a statistical metric that quantifies the association between two variables. Correlation is a commonly employed measure in finance to evaluate the level of connection between various assets in a portfolio. A correlation coefficient is a numerical value that ranges between -1 and +1. A value of -1 indicates a perfect negative correlation, +1 indicates a perfect positive correlation, and 0 indicates no association. Comprehending correlation is essential for portfolio diversification, as it enables investors to ascertain the degree to which various assets co-vary or exhibit inverse movements. According to a study by Fabozzi, Markowitz, and Gupta (2002), a low or negative correlation between assets can offer diversification benefits, as it reduces the portfolio's overall risk (Fabozzi et al., 2002). By including assets with low correlations, investors can potentially achieve a more efficient risk-return tradeoff and mitigate the impact of market fluctuations.

Correlation is of utmost importance in making asset allocation decisions and managing portfolios. According to Brinson, Hood, and Beebower (1986), the bulk of the variability in portfolio returns may be attributable to asset allocation decisions which

includes the consideration of correlation among different assets (Brinson et al., 1986). Correlation helps investors identify assets that are likely to move in similar patterns or exhibit divergent behavior during different market conditions. For example, a study by Ang and Bekaert (2002) examined the correlation between stock returns and bond returns across various countries. The findings suggested that the correlation between stocks and bonds is generally low or even negative, indicating that these two asset classes can provide diversification benefits when combined in a portfolio (Ang & Bekaert, 2002). Gaining insight into the correlation between various assets can assist in building portfolios that are resistant to market volatility and facilitate the attainment of investing objectives.

It is crucial to acknowledge that correlation is a dynamic measure and can vary over time. Economic variables, market circumstances, and investors' sentiment can influence the correlation between assets. For instance, during periods of market stress or financial crises, correlations among different assets tend to increase as investors seek refuge in perceived safe haven assets, leading to a higher degree of positive correlation. Conversely, during periods of economic stability or specific market events, correlations may shift, highlighting the importance of regular portfolio monitoring and adjustment. Additionally, it is crucial to recognize that correlation does not imply causation. A high or low correlation between assets does not necessarily indicate a cause-and-effect relationship; it merely reflects the statistical association between variables. As a result, before making an investment, investors should consider a number of aspects, carry out in-depth research, and speak with specialists.

5.5 Data Analysis

Table 5.1 displays a correlation matrix between various financial and art-related assets. Each cell in the table represents the correlation coefficient between two variables, measuring the strength and direction of their relationship. The values of a correlation coefficient range from -1 to +1, where +1 denotes a perfect positive correlation, 0 denotes no association, and -1 represents a perfect negative correlation.

Table 5.1: Correlation of art with different other Asset Class

	NIFTY Log	Sensex Log	Gold (Per 10 Gram) Log	USD_INR Log	10 Yr Bond Log	Contemporary Art Log	Modern Art Log
NIFTY Log	1						
Sensex Log	0.416973303	1					
Gold (Per 10 Gram) Log	0.496274077	0.226964769	1				
USD_INR Log	0.770140894	0.617464513	0.535043946	1			
10 Yr Bond Log	-0.69399514	-0.44847855	-0.677232947	-0.658704772	1		
Contemporary Art Log	-0.008970852	-0.156745337	0.107972975	-0.20456739	0.047707005	1	
Modern Art Log	-0.10470798	0.283278772	0.1324513	-0.062265586	-0.025964506	0.658751134	1

The first row and first column represent the NIFTY Log index, which is positively correlated with the Sensex Log (0.416) and Gold (Per 10 Gram) Log (0.496), indicating a moderate positive relationship between these assets. The correlation with USD_INR Log (0.770) suggests a relatively stronger positive relationship, implying that as the NIFTY index increases, the value of the Indian rupee against the US dollar tends to rise as well.

The second row and second column represent the Sensex Log index, which shows a moderate positive correlation with the NIFTY Log (0.416) and Gold (Per 10 Gram) Log (0.227). The higher correlation with USD_INR Log (0.617) suggests that changes in the Sensex index are somewhat associated with movements in the USD/INR exchange rate.

The correlation between the Gold (Per 10 Gram) Log, and the NIFTY Log (0.496) and Sensex Log (0.227) is positive but relatively modest. This implies some degree of association between gold prices and the performance of these stock market indices.

The USD_INR Log column shows positive correlations with the NIFTY Log (0.770) and Sensex Log (0.617), indicating that changes in the USD/INR exchange rate are linked to movements in these stock market indices. A positive correlation suggests that when the Indian rupee strengthens against the US dollar, the stock market indices also tend to increase.

The 10 Yr Bond Log column displays negative correlations with the NIFTY Log (-0.694) and Sensex Log (-0.448). This negative correlation indicates an inverse

relationship, suggesting that bond prices tend to rise when stock market indices decline. This negative correlation can be attributed to investors seeking safer assets, such as bonds, during market uncertainty.

The Contemporary Art Log column shows weak correlations with the NIFTY Log (-0.009) and Sensex Log (-0.157), implying a relatively insignificant relationship between contemporary art prices and these stock market indices.

The Modern Art Log column displays slightly stronger positive correlations with the Sensex Log (0.283) and Gold (Per 10 Gram) Log (0.132), indicating a modest positive relationship between modern art prices and these assets.

Correlation does not imply causation, and the relationships depicted in the table should be interpreted cautiously. The data provided can offer insights into the historical associations between these assets but may not necessarily reflect future trends or patterns.

5.6 Conclusion

Portfolio diversity is an important technique for investors looking to control risk while maximizing profits. Investors might possibly lessen the impact of volatility in any one investment by diversifying across asset classes, resulting in a more efficient risk-return tradeoff. As a statistical measure, correlation plays a vital role in portfolio diversification. It helps buyers figure out how different assets are related to each other and how strongly they are linked.

Research and studies have highlighted the benefits of diversification and the role of correlation in portfolio construction. Studies by Brinson, Hood, and Beebower (1986) and Fabozzi, Markowitz, and Gupta (2002) emphasize that asset allocation decisions, including considering correlation, significantly impact portfolio performance. Assets with low or negative correlations can benefit diversification, reducing overall portfolio risk. This is particularly relevant in combining stocks and gold in a portfolio, as observed in studies by Baur and Lucey (2010) and Lucey, O'Connor, and Voronkova (2008). Gold's negative correlation with stock returns during financial distress suggests its potential as a diversifier, offsetting losses incurred by equity investments.

It's important to remember that the correlation is not always the same. It can change from time to time. Correlation between assets can be changed by factors like market conditions, economic factors, and investor opinion. To keep the desired asset distribution and adapt to changing correlations, it's necessary to check and make changes to the portfolio on a regular basis. Furthermore, it is imperative to acknowledge that correlation does not necessarily indicate causation. There may or may not be a cause-and-effect link between assets just because they have strong or weak correlations.

Moreover, investors should consider various dimensions of diversification beyond asset classes. Geographical, industry, and investment style diversification are additional factors to consider in building a diversified portfolio. Elton et al. (2014) emphasise the importance of considering these factors alongside correlation when constructing portfolios resilient to market fluctuations.

It is worth noting that diversification does not offer loss prevention or profit guarantees. Diversification success relies on an investor's ability to identify assets with low correlations and construct a well-balanced portfolio. Risk tolerance, investment objectives, and time horizon should also be considered when determining the appropriate allocation of assets. The optimal allocation to different assets may vary for each investor based on their individual circumstances, as indicated in the study by Baur and McDermott (2010). Risk-averse investors may benefit from a higher allocation to safe-haven assets, while less risk-averse investors may prefer a smaller allocation.

Portfolio diversification and understanding correlation are key components of effective investment management. Investors may be able to lower risk and increase returns by diversifying across a variety of asset types and taking correlation into consideration. However, it is important to recognize that correlation is dynamic, and diversification strategies should be regularly reviewed and adjusted. Seeking professional advice, conducting thorough research, and considering multiple dimensions of diversification can help investors construct well-balanced portfolios that align with their risk profiles and investment goals. Investors can better withstand fluctuations in the market and reach their long-term financial goals with a diversified portfolio.

CHAPTER 6

ART VALUATION MODELS

6.1 Introduction

As contemporary society continues its transformation into a realm of continuous self-change, the domain of innovation has expanded, now encompassing all processes that introduce novel elements. The necessity of extensively defining innovation becomes imperative, as it must encompass diverse instances—from creating specific synthesiser sounds and implementing new labour market policies to emerging innovative painting styles and groundbreaking mathematical proofs (Baldwin & von Hippel, 2011). These novel products, styles, and practices undergo a rigorous selection and positioning process, where they are acknowledged as valuable entities within communities, organisations, and markets ((Huhn et al., 1996). The complexity of this process must be considered, as for an unknown element to integrate into a socially significant realm, it must first be recognised as something new (Christensen et al., 2015).

The aspect of “newness” thus becomes central to research, raising questions regarding how the established understanding of the commonplace can be disrupted by the emergence of an entity acknowledged and appraised as novel by a specific group of evaluators (Garud, Gehman, & Giuliani, 2014). To understand the dynamics of social innovation in greater detail, it is essential to trace their trajectories—beginning from situations of initial dissonance and leading to moments of valuation, during which the newfound elements are assessed against the prevailing value scales in the established world (Swidler, 2002).

Art, a domain that has captivated human minds for centuries, reflects the essence of culture, emotions, and creativity (Danto, 2013). Art appreciation extends beyond its aesthetic value, as the commercial interest in the art market has surged. Determining the price of artwork has become crucial in the contemporary art world, as artists, collectors, investors, and art institutions seek reliable and objective methods to evaluate the worth of their prized possessions (Velthuis, 2011). Researchers have explored various valuation models that encompass a wide range of approaches, considering historical significance, artistic merit, market trends, and intrinsic attributes (Kraussl, 2010).

Valuing art is inherently complex, involving a combination of subjective and objective factors. The value of a piece of art can be influenced by various factors, including the artist's reputation, the work's rarity, condition, provenance, and current demand for comparable works (Candela & Scorcu, 1997, Valsan, 2006)).

One of the key factors in valuing art is the artist's reputation. Artists who are well-known and have a strong track record of producing successful works are typically valued higher than lesser-known or emerging artists. Numerous elements can impact an artist's reputation, including their education, exhibition history, and critical appraisals of their work (Throsby, 2000). The rarity of a work of art is also a significant factor in its value. Unique works or those in limited editions tend to be valued higher than those that are mass-produced or widely available (Goetzmann, Renneboog, & Spaenjers, 2011). Similarly, the condition of a work of art can impact its value, with works in excellent condition generally being valued higher than those that are damaged or in poor condition (Ashenfelter & Graddy, 2003).

The provenance of a work of art is another essential aspect in determining its value. Provenance refers to a piece of art's history of ownership, and works with a strong and well-documented provenance might be valued higher than those with a less clear or unknown background (Frey & Pommerehne, 1989). Finally, the present demand for comparable works is a critical component in determining art value, as the art market can be influenced by a multitude of variables, including economic conditions, art world trends, and collector and investor tastes (Mei & Moses, 2002).

Valuing art is not an exact science, and different factors can carry varying weights depending on the specific work of art and the current market conditions. Auction houses, art dealers, and appraisers may use different methods and criteria to arrive at a valuation for a work of art, and it is ultimately up to the buyer and seller to determine a fair price based on their own needs and preferences (Hodgson & Vorkink, 2004).

The creation of a model based on the information presented in art valuation reports, though possible, would be complex and challenging. The artist's fame, the rarity of the piece, its condition, provenance, and the current market for similar works all contribute to determining its value. To construct a model that effectively reflects the worth of a

piece of art, all of these aspects must be considered, along with a set of criteria and algorithms that can appropriately assess them (Ginsburgh, Mei, & Moses, 2006). Furthermore, the art market is constantly evolving and may be impacted by a range of factors such as economic conditions, art world trends, and collector and investor tastes (Velthuis, 2011). Therefore, a model designed to value art would need to be flexible and adaptable to changing market conditions.

In conclusion, while it may be possible to create a model based on the information presented in art valuation reports, it would require a substantial investment of time, resources, and expertise in both art and data modeling.

6.2 Different Art Valuation Model

This research aims to comprehensively review different valuation models, highlighting their strengths and weaknesses. By identifying potential areas of integration, the study seeks to contribute to developing a more comprehensive approach to artwork valuation. The findings underscore the necessity of combining quantitative rigour with qualitative insights to address the unique challenges posed by art valuation. Future research could explore hybrid models that integrate economic, cultural, and social factors, providing a more holistic framework for understanding and assessing the value of art.

The valuation of artwork presents a complex challenge due to its multifaceted nature, which encompasses both tangible and intangible elements. This research aims to comprehensively review the various valuation models proposed by researchers, (Guan et al., 2024) providing insights into the methodologies that assess artwork prices. By examining the strengths and limitations of each model, this study seeks to enhance the understanding of art valuation and its implications for the art market. The diverse nature of artwork poses unique challenges in developing a unified valuation model. As a result, scholars from various disciplines have contributed to the discourse on this subject.

In recent years, the Art as an Investment (AAI) approach has gained significant attention. Pioneered by Mei and Moses (2002), this model conceptualizes artworks as an alternative investment asset class. The AAI model treats artworks similarly to financial assets, with expected returns and associated risk profiles, allowing the

application of traditional financial tools like the Capital Asset Pricing Model (CAPM) or the Sharpe ratio to estimate the financial worth of art. This approach appeals particularly to investors seeking portfolio diversification. However, it is not without controversy, as some critics argue that reducing art to a mere financial asset may undermine its cultural and artistic significance (Brière, et al., 2013). The tension between the financialization of art and its cultural value is a central concern in the discourse surrounding the AAI model.

One of the foundational approaches in the literature is the Hedonic Pricing Model (HPM). Introduced by Rosen (1974), HPM evaluates the price of artwork by analyzing its inherent characteristics, including size, medium, artist reputation, historical significance, and subject matter. The model utilizes historical sales data to regress these attributes, offering a systematic method to determine their contribution to the artwork's final price (Baumol & Bowen, 1966). While HPM is a rigorous quantitative approach, it has been critiqued for potentially overlooking intangible factors that significantly influence the perceived value of art, such as cultural relevance and emotional connection. The limitations of HPM highlight the challenges in capturing the full spectrum of variables that affect art pricing.

Beyond quantitative models, some researchers have focused on qualitative methodologies exploring art valuation's social and cultural dimensions. Huhn et al. (1996) proposed the theory of cultural capital, positing that the value of artworks is intrinsically linked to the social status and symbolic power of artists and collectors. This model emphasises the importance of understanding the intricate network of relationships within the art world and how these social dynamics influence art prices. However, applying cultural capital theory in a systematic valuation framework poses significant challenges due to its reliance on subjective judgments and the complexities inherent in social interactions within the art market.

6.2.1 Capital Asset Pricing Model (CAPM)

The Capital Asset Pricing Model (CAPM) is traditionally employed in finance to estimate the expected return on an investment by considering its risk relative to the overall market. The model, formulated by William F. Sharpe in 1964, hinges on the

relationship between systematic risk (as measured by beta) and expected return, assuming markets are efficient and that all investors have homogeneous expectations. However, applying CAPM to the valuation of artworks, such as paintings, presents significant theoretical and practical challenges.

A popular financial tool for estimating projected investment returns is the Capital Asset Pricing Model (CAPM), which considers the risk-free rate, market return, and asset beta—a measure of an asset's volatility relative to the market. While this technique is often used to value financial items, it may also be used to value paintings. To assess the expected return on investment in an artwork, the research developed a CAPM-based model that integrates financial and non-financial elements such as the artist's reputation, the picture's provenance, and its historical relevance.

The paper titled "The Capital Asset Pricing Model (CAPM) Applied to Paintings" critically examines the application of the Capital Asset Pricing Model (CAPM) in the context of the art market, with a specific focus on paintings. The authors, Arturo Cifuentes and Ventura Charlin, identify significant conceptual flaws in previous studies that have applied CAPM to art market returns, primarily due to the inappropriate estimation methods employed. These flaws include the reliance on hedonic pricing models, which are based on an "ideal" or average painting with unchanging characteristics over time, rather than capturing the total returns necessary for accurate CAPM analysis.

Other prior researchs also outlines that most prior research using CAPM in the art market does not account for the unique and subjective factors inherent to the valuation of art, such as the inability to short-sell paintings, the indivisibility of artworks, and the fact that art investors do not typically behave as variance-minimizers, unlike investors in more traditional markets like stocks or bonds. These factors contribute to the difficulty of applying CAPM effectively in the art market, where the model's assumptions do not hold as strongly as they do in other financial markets.

Stein (1977) is considered one of the pioneering researchers in applying the Capital Asset Pricing Model (CAPM) to the valuation of paintings. His study primarily focused on the art markets in the United States and Britain, suggesting that a significant portion

of the returns on paintings could be attributed to the aesthetic enjoyment or "viewing pleasure" that they provide to their owners.

Cifuentes and Charlin propose a re-evaluation of the methods used to estimate returns in the art market, suggesting alternative approaches to calculating returns that could better reflect the market dynamics of art (Moulard et al., 2014). They argue that previous studies have often used inappropriate market indexes, such as the S&P 500, to represent the broader market, when in reality, art market dynamics are poorly correlated with those of traditional financial markets. The authors recommend using art-specific indexes, like the RS Art Index developed by Renneboog and Spaenjers (2013), which more accurately capture the returns of the art market.

6.2.1.1 Strengths of the Capital Asset Pricing Model (CAPM) in Artwork Valuation

One of the key strengths of CAPM in artwork valuation is its simplicity and ease of use. The model provides a straightforward framework that is accessible even to art market participants who may not have extensive financial expertise (Cifuentes & Charlin, 2014). CAPM's integration of market dynamics also allows for a systematic risk assessment by considering how macroeconomic factors and broader art market trends affect an artwork's price (Anne, 2016). This systematic approach ensures that the model accounts for risk-adjusted returns, which is crucial in the art market, where higher returns are typically demanded for higher-risk investments.

Simplicity and Ease of Use: CAPM offers a straightforward and easy-to-understand framework for valuing assets, including artworks. Its mathematical simplicity makes it accessible to art market participants, even those without extensive financial expertise.

Market Integration: CAPM assumes that assets' returns are directly linked to overall market movements. In the context of art valuation, the model considers the broader dynamics of the art market, reflecting changes in the demand and supply of artworks.

Systematic Risk Assessment: CAPM accounts for systematic risk, which refers to risks that affect the entire market or a specific sector. In artwork valuation, CAPM considers how macroeconomic factors and art market trends influence an artwork's price.

Risk-Adjusted Returns: CAPM factors in the risk associated with the artwork and adjusts its expected returns accordingly. This is crucial in valuing paintings, as it recognizes that investors typically demand higher returns for taking on higher risks.

6.2.1.2 Weaknesses of the Capital Asset Pricing Model (CAPM) in Artwork Valuation

Arturo Cifuentes and Ventura Charlin identifies several key challenges when applying the CAPM to the art market. These challenges highlight the fundamental differences between traditional financial markets and the art market, questioning the suitability of CAPM for art investment analysis. Below are the primary challenges discussed in the paper:

Inappropriate Estimation Methods:

Hedonic Pricing Models: Previous studies often rely on hedonic pricing models to estimate returns, which focus on an "ideal" or average painting with static characteristics. This approach fails to capture the total returns necessary for accurate CAPM analysis.

Estimation Variability: The paper demonstrates that estimated returns vary significantly depending on the chosen method, leading to unreliable CAPM results.

Unique Characteristics of the Art Market:

Indivisibility of Artworks: Unlike stocks or bonds, paintings cannot be divided into smaller units, making diversification and liquidity challenging.

Inability to Short-Sell: Investors cannot short-sell paintings, limiting strategies that are commonly used in traditional markets to hedge risks.

Subjective Valuation: The valuation of art is highly subjective, influenced by factors such as artist reputation, provenance, and aesthetic appeal, which are not easily quantifiable or incorporated into CAPM.

Inadequate Market Indexes:

Misaligned Benchmarks: Utilizing traditional financial indexes like the S&P 500 to represent the broader market is inappropriate, as the art market dynamics are poorly correlated with these indexes.

Lack of Art-Specific Indexes: The absence of reliable art-specific indexes hampers the ability to accurately measure market performance and risk within the art sector.

Violation of CAPM Assumptions:

Investor Behavior: Art investors do not typically behave as variance-minimizers, a key assumption of CAPM, leading to discrepancies in expected returns.

Market Equilibrium Conditions: The art market does not consistently meet the equilibrium conditions required for CAPM, such as homogeneity of expectations and perfect information.

Unclear Definition of Returns:

Total vs. Estimated Returns: What constitutes the "true" return in the art market is ambiguous. The paper points out that different methods of estimating returns can lead to vastly different interpretations, undermining the reliability of CAPM analysis.

Empirical Limitations:

Weak Empirical Support: The empirical foundation supporting CAPM is considered weak even in conventional markets. These limitations are exacerbated in the art market due to its unique features.

Confidence Interval Issues: The estimated beta coefficients often have broad confidence intervals, especially when accounting for estimation errors, making it difficult to draw definitive conclusions.

Monotonicity Condition Concerns:

Index Reliability: Price indices based on time-dummies do not satisfy Fisher's monotonicity condition, casting doubt on the reliability of such return estimates and raising questions about the validity of the resulting CAPM analysis.

Dependence on Return Estimation Choices:

Method-Driven Variability: The CAPM results are highly sensitive to the chosen method for estimating returns, leading to inconsistent and potentially misleading conclusions about the relationship between art investments and market risk.

Recommendation to Abandon CAPM for Art:

Given the cumulative impact of these challenges, the authors suggest that attempting to apply CAPM to the art market may be futile and recommend abandoning its use in this context

Other Challenges

Art Market Specifics: The CAPM assumes that all investors are rational and risk-averse, which may not fully apply to the unique characteristics of the art market. Art investors often have diverse motivations, such as aesthetic appreciation and emotional connection, leading to deviations from the standard risk preferences assumed by CAPM.

Illiquidity of Art Assets: CAPM relies on the concept of easily tradable assets, which may not align with the illiquid nature of artworks. Art sales can be infrequent and subject to significant price fluctuations, making the application of CAPM challenging.

Subjectivity and Intangibles: CAPM tends to focus on objective and quantifiable factors, such as historical price data and market risk, while undervaluing intangible aspects like the emotional or cultural significance of an artwork. Artworks may have unique qualities that defy easy quantification, affecting their pricing dynamics.

Lack of Diversification: CAPM assumes that investors can easily diversify their portfolios to reduce risk. However, artworks are not perfectly correlated with traditional financial assets, limiting the potential for full diversification, which the model may need to fully capture.

Limited Scope for Alternative Assets: CAPM is designed for financial assets and may not fully encompass the complexities of valuing non-traditional assets like artworks with distinct market characteristics and drivers of value.

While the Capital Asset Pricing Model (CAPM) offers a structured approach to valuing financial assets, its application to artwork valuation presents certain limitations. The unique characteristics of the art market, including the illiquidity of art assets, the

subjectivity involved in valuing intangible aspects, and the challenges of achieving full diversification, complicate the model's use in this context. To obtain a more accurate and comprehensive valuation of artworks, it is essential to complement CAPM with other models that better account for the complexities and nuances of the art market. CAPM is a cornerstone of financial theory, its application to the valuation of artworks is fraught with challenges. The subjective and illiquid nature of the art market, coupled with the difficulty in defining systematic risk for non-financial assets, renders CAPM an unsuitable tool for art valuation. Alternative methods, such as hedonic pricing models, repeat-sales regression, and expert appraisals, are better suited to capture the unique characteristics of the art market.

6.2.2 Comparative Market Analysis (CMA)

The Comparative Market Analysis (CMA) is widely regarded as a suitable and practical method for art valuation, particularly due to its comparative approach, which is well-aligned with the complexities of the art market. This method involves evaluating an artwork by comparing it to similar works that have been sold in the past, taking into account key factors such as the artist's reputation, the medium used, the size of the artwork, its condition, and its provenance. The CMA approach is extensively used by art market professionals, including appraisers, dealers, and auction houses, because it offers a practical means of estimating an artwork's value based on observable market data.

One of the primary reasons for the suitability of CMA in art valuation is its reliance on actual market transactions, which provides a concrete basis for valuation as opposed to theoretical models that may not fully capture the nuances of the art market. By analyzing past sales of comparable artworks, the CMA method can provide insights into market trends and buyer preferences, making it a relevant and reliable tool for estimating the value of a particular artwork. Moreover, the method's ability to adjust for differences in size, condition, and provenance ensures that valuations are tailored to the specific characteristics of the artwork in question, enhancing its accuracy and relevance in real-world settings (Lerner & Bresler, 2020; Baumol, 1986).

The practicality of CMA is further reinforced by its widespread acceptance among art market participants. Auction houses, in particular, rely heavily on CMA to set reserve

prices and estimate auction outcomes, as the method reflects the current market dynamics and the prices that buyers are willing to pay for similar works (Steinkamp, 2021). Additionally, dealers and appraisers use CMA to provide clients with informed valuations that consider both historical data and current market conditions, thereby ensuring that the estimated value of an artwork is both realistic and market-driven (Frey & Pommerehne, 1989). To conduct a CMA, several key factors are considered:

Artist: The reputation and demand for an artist's work significantly influence the price of the artwork. Renowned artists with an established market presence tend to command higher prices.

Medium: Different artistic mediums (e.g., painting, sculpture, photography) have distinct markets and price structures, reflecting collectors' preferences and market trends.

Size: An artwork size can impact its value. Larger pieces often command higher prices, but this relationship may only sometimes hold true.

Condition: The condition of an artwork is essential in determining its value. Well-preserved paintings typically fetch higher prices, while damaged or poorly maintained pieces may be devalued.

Provenance: The history of ownership and exhibition of the artwork, known as its provenance, can significantly influence its value. Artworks with notable provenances, such as previous ownership by famous collectors or inclusion in prestigious exhibitions, may command premium prices.

6.2.2.1 Strengths of Comparative Market Analysis (CMA)

CMA's reliance on real-world sales data makes it a practical and data-driven approach to art valuation. It considers the evolving nature of the art market by examining the recent sales, reflecting current market trends and demand for specific artists and styles. Furthermore, it offers transparency, as the valuation is based on actual sale prices of comparable artworks.

6.2.2.2 Limitations of Comparative Market Analysis (CMA)

While Comparative Market Analysis provides valuable insights, it has some limitations. The availability of data on comparable sales can be a constraint, especially for rare or unique artworks with limited sales history. Additionally, CMA may not adequately account for intangible factors that influence art prices, such as the emotional or cultural significance of an artwork.

Comparative Market Analysis remains a prominent and widely-used method for art valuation due to its pragmatic approach and reliance on real-world market data. By considering factors like artist's reputation, medium, size, condition, and provenance, CMA offers a structured framework for estimating the value of an artwork. However, it is essential to acknowledge its limitations and consider supplementary valuation models that address the intangible aspects of art pricing. Integrating various valuation approaches can lead to a better understanding of the intricate dynamics governing the pricing of artworks in the ever-evolving art market.

6.2.3 Cost Approach

This method is based on the cost of creating a new artwork of similar size, quality, and materials. However, this method is only sometimes used for art valuation because it does not consider the subjective factors that influence the value of art. Valuing artworks accurately is a critical aspect of the art market, and various valuation models have been proposed by researchers to achieve this goal. One such method is the Cost Approach, which assesses an artwork's value based on the cost of creating a new artwork with similar size, quality, and materials (Steinkamp, 2021). While the Cost Approach offers a structured and objective methodology, its limitations in capturing the subjective factors that influence art's value have led to its limited application in the art valuation domain. This article presents an in-depth review of the Cost Approach, analyzing its strengths, weaknesses, and relevance in the context of artwork valuation.

The Cost Approach is a traditional method commonly employed in valuing tangible assets, such as real estate and machinery. In the context of artwork valuation, this approach evaluates an artwork's worth by estimating the cost required to create a new artwork with comparable characteristics, including size, quality, and materials. The

underlying premise is that the value of an artwork can be approximated based on the expenses incurred in reproducing a similar piece from scratch.

6.2.3.1 Strengths of the Cost Approach

One of the primary strengths of the cost-based valuation approach is its straightforwardness and objectivity. This method relies on quantifiable data, such as the cost of materials and the artist's time, making it less susceptible to subjective judgments (Smith & Parr, 2018). The cost-based approach can be particularly useful for emerging artists or for artworks that have not yet entered the secondary market, where comparative data might be scarce. By focusing on the tangible costs of production, this method provides a baseline valuation that can be useful for insurance purposes, taxation, and financial reporting (McAndrew, 2016).

Moreover, the cost-based approach aligns with certain accounting principles, making it relevant for financial documentation. For example, when artworks are produced within a business or gallery context, the cost-based approach allows for the capitalization of costs, thereby facilitating more accurate financial statements (Lerner & Bresler, 2020). This method can also provide a clear framework for establishing prices for commissioned works, where the artist's fees and material costs can be explicitly accounted for in the pricing structure.

Objectivity and Structure: The Cost Approach provides a systematic and objective framework for determining an artwork's value, relying on measurable factors such as material costs and labor expenses. This offers a clear and structured methodology, particularly in cases where there is limited historical sales data for comparable artworks.

Useful for Certain Artworks: The Cost Approach may be more applicable to artworks where their intrinsic value lies primarily in their material composition and craftsmanship, rather than subjective elements. For instance, in the case of prints or limited edition artworks, where material costs play a significant role in determining value, the Cost Approach may offer a relevant valuation method.

6.2.3.2 Weaknesses of the Cost Approach

Despite its strengths, the cost-based valuation approach has significant limitations when applied to the art market. A critical weakness is that it fails to capture the intangible

factors that contribute to the value of art, such as the artist's reputation, the artwork's historical significance, and its emotional or cultural impact (Frey & Pommerehne, 1989). Art is often valued not only for its physical attributes but also for its aesthetic qualities, rarity, and the prestige associated with owning a particular piece. The cost-based approach, with its focus on production costs, cannot adequately account for these factors, leading to potential undervaluation of artworks.

Additionally, the cost-based approach does not consider market demand, which plays a crucial role in determining the price of art (Baumol, 1986). The value of an artwork is often influenced by trends, collector preferences, and market conditions, which are not reflected in the production costs. As a result, the cost-based valuation might produce figures that are disconnected from the actual prices artworks can fetch in the market. This discrepancy can be particularly pronounced in the case of well-known artists, whose works may command prices far exceeding the costs of their production due to their reputation and the desirability of their work (Velthuis, 2005).

Moreover, the cost-based approach may not be suitable for evaluating historical or rare artworks, where the production costs are either unknown or irrelevant. In such cases, other valuation methods, such as market-based or income-based approaches, are more appropriate as they consider factors like provenance, historical importance, and potential future appreciation (Throsby, 2000).

Subjective Factors Ignored: Artworks' value is significantly influenced by subjective factors, such as artistic reputation, historical significance, provenance, cultural context, and emotional appeal. The Cost Approach neglects these intangible aspects, resulting in potential undervaluation or misrepresentation of an artwork's true worth (Steinkamp, 2021).

Unique Nature of Art: Each artwork is a one-of-a-kind creation, making it challenging to find exact replicas for cost comparison. Artistic nuances, creative expression, and the artist's signature style cannot be accurately quantified, leading to inaccuracies in valuations based solely on material costs.

Market Discrepancies: The art market experiences fluctuations, and prices can vary significantly from material and labor costs due to factors like demand, supply, art

trends, and collector preferences. As a result, relying solely on the Cost Approach may need to pay more attention to the ever-changing dynamics of the art market.

6.2.3.3 Conclusion

While the Cost Approach offers a structured and objective framework for artwork valuation, its limitations in capturing subjective factors and the unique nature of art have limited its widespread use in the art market. Art valuation requires a holistic approach that considers both objective and subjective elements, combining multiple valuation models to arrive at a comprehensive understanding of an artwork's value. Future research should continue to explore innovative ways to integrate various approaches, including the Cost Approach, to enhance the accuracy and relevance of artwork valuation methodologies.

6.2.4 Income Approach

The income approach estimates the future financial benefits that could be generated by the painting, such as through exhibitions, licensing, or resales. This method is often used for investment-grade art where potential returns are a key consideration (Frey & Pommerehne, 1989).

This method is based on the future earnings the artwork will generate. This method is typically used for valuing rare or unique paintings that have the potential to create significant income, such as by being rented for exhibitions or used in advertising. Artwork valuation is a critical aspect of the art market, and researchers have proposed various valuation models to address this complex task. One such method is the Income Approach, which assesses an artwork's value based on its potential income-generating capabilities. This study thoroughly examines the Income Approach, evaluating its strengths, weaknesses, and applicability in the context of artwork valuation.

The Income Approach is a valuation approach often used to evaluate income-producing assets such as real estate or enterprises. This method of valuing artwork examines its worth based on the potential revenue it may provide over time. The underlying premise is that artworks can be considered investment assets, generating revenue through

activities such as exhibition fees, licensing, or rental income. Therefore, the value of an artwork is estimated by projecting its future income streams.

6.2.4.1 Strengths of the Income Approach

Investor Perspective: The Income Approach considers artworks as investment assets, aligning with the perspective of art investors who seek returns on their art holdings. This perspective can be relevant for evaluating art collections owned by individuals, corporations, or institutions as part of their investment portfolios.

Income Potential Consideration: By focusing on the potential income-generating capabilities of an artwork, the Income Approach provides a more forward-looking valuation perspective. It takes into account not only the artwork's artistic and historical significance but also its potential financial performance over time.

Diverse Revenue Sources: The Income Approach incorporates various potential income streams, such as exhibition fees, licensing agreements, and rentals. This broad view of revenue sources allows for a more comprehensive evaluation of the artwork's financial potential.

6.2.4.2 Weaknesses of the Income Approach

Limited Applicability to Artworks: The Income Approach may have limited applicability to a wide range of artworks, as many art pieces are not primarily acquired for their income-generating potential. Art is often acquired for aesthetic, emotional, and cultural reasons, rather than as financial assets.

Data Availability: Projecting future income streams for artworks can be challenging due to the scarcity of relevant data and the unpredictability of the art market. Historical sales data and revenue projections for specific artworks may need to be more readily available and reliable.

Intangible Factors Ignored: The Income Approach does not account for intangible factors that significantly impact an artwork's value, such as artistic reputation, provenance, cultural significance, and emotional appeal. These factors are critical in art valuation but need to be captured adequately by an income-based model.

The Income Approach presents an alternative valuation perspective by considering artworks as income-generating assets. While relevant for certain art collections or investment portfolios, its limitations in capturing the broader nuances of art valuation, including subjective factors and unpredictable market dynamics, restrict its widespread application in the art market. A comprehensive art valuation methodology should incorporate multiple approaches, including the Income Approach, to account for the diverse and intricate elements contributing to an artwork's true value.

6.2.5 Subjective Approach in Artwork Valuation

The valuation of artworks has been a subject of extensive research, leading to the development of diverse valuation models proposed by researchers. One such method is the Subjective Approach, which takes into account the subjective and intangible factors that influence an artwork's value. This article offers an in-depth analysis of the Subjective Approach, exploring its strengths, limitations, and significance in capturing the complexities of artwork valuation. This method is based on the personal opinion of an expert appraiser (Morris & Alvey, 2024). The appraiser will consider all of the relevant factors and then make a subjective judgment about the value of the artwork.

The Subjective Approach is a valuation model that recognizes the intrinsic and intangible qualities of artworks as significant contributors to their value. Unlike traditional valuation methods focusing solely on objective factors such as historical sales data and material costs, the Subjective Approach acknowledges the influence of factors like artistic expression, cultural context, emotional impact, and the artist's reputation on an artwork's worth. This approach recognizes that art is a unique and subjective form of human expression that cannot be fully quantified or standardized (Morris & Alvey, 2024).

6.2.5.1 Strengths of the Subjective Approach

Emphasis on Intangible Value: The Subjective Approach captures the essence of an artwork by considering its subjective and intangible attributes. It acknowledges that the emotional, cultural, and historical significance of an artwork adds value beyond its tangible aspects.

Reflects Artistic Originality: Artworks are distinct creations, and the Subjective Approach recognizes and celebrates the originality and creativity inherent in each piece. It acknowledges that the uniqueness of an artwork contributes to its allure and value.

Artist's Influence: The Subjective Approach takes into account the reputation and influence of the artist, considering how the artist's style, innovation, and contribution to the art world affect the artwork's worth.

Cultural and Historical Context: This approach contextualizes the artwork within its historical and cultural setting, appreciating its broader impact on art movements and societal influences. Such context provides valuable insights into an artwork's value and relevance.

6.2.5.2 Limitations of the Subjective Approach

Lack of Standardization: The Subjective Approach's reliance on individual perceptions and interpretations makes it challenging to standardize and apply consistently across all artworks. Valuations may vary significantly depending on the evaluator's perspective.

Potential Bias: Subjective assessments are susceptible to personal biases and individual preferences, potentially leading to divergent valuations for the same artwork.

Difficulties in Quantification: Intangible factors, such as emotional appeal and cultural significance, are difficult to quantify objectively, making it challenging to precisely determine their impact on an artwork's value.

Time Sensitivity: The value attributed to subjective factors may change over time as art movements evolve, artists gain recognition, and societal preferences shift. This temporal sensitivity can complicate long-term valuations.

The Subjective Approach offers a unique and valuable perspective in artwork valuation by recognizing the intrinsic and intangible qualities that define an artwork's worth. By embracing the complexities of art and appreciating the emotional and cultural connections it establishes, this approach provides a deeper understanding of an artwork's true value. However, its subjective nature and potential for variation in

valuations warrant complementary use with other valuation models to form a comprehensive understanding of the multifaceted art market.

6.3 Some of the Researchers who have proposed different Valuation Models for Art

6.3.1 Michael Moses

Moses is an art assessor who also wrote the book *The Art of Art Appraisal*. He has developed a CMA-based value model that considers aspects such as the artist's reputation, the state of the artwork, and current market trends.

Michael Moses and Jianping Mei created the Mei Moses Fine Art Index and many artwork appraisal methods. The Mei Moses Fine Art Index is well-known in art and serves as a framework for measuring art performance as an investment asset.

6.3.1.1 The Repeat-Sales Method

The Repeat-Sales Method, also known as the “Pairwise Comparison Method,” is one of the key valuation models developed by Michael Moses and Jianping Mei. It is based on analyzing the sales price of an artwork at different points in time, tracking the price changes for the same painting over time. This method allows the researchers to calculate the artwork's appreciation rate and compare it with other investment assets.

6.3.1.1.1 Strengths of Repeat-Sales Method

Objective Data: The Repeat-Sales Method relies on actual transaction data, making it an objective and data-driven approach to art valuation.

Market Performance: This method enables the assessment of art as an investment asset, comparing its performance with other financial instruments.

6.3.1.1.2 Limitations of Repeat-Sales Method

Data Availability: Availability of repeat-sales data for specific artworks may be limited, especially for less frequently traded or rare pieces, which can affect the method's accuracy.

Limited Sample Size: The repeat-sales method may require a substantial sample size to draw meaningful conclusions, making it less applicable to individual artworks.

6.3.1.2 The Hedonic Regression Model

The Hedonic Regression Model is another prominent valuation model Michael Moses and Jianping Mei developed. This model seeks to disentangle the various factors influencing an artwork's price, including attributes like size, artist's reputation, medium, and provenance. The model aims to quantify the contribution of each factor to the artwork's value.

The hedonic pricing model is a statistical technique used to estimate the price of a painting by analyzing various attributes that contribute to its value, such as the artist's fame, the size of the work, the medium used, and the period in which it was created. This model is particularly useful in understanding how different factors influence the price of an artwork (Ginsburgh & Weyers, 2011).

6.3.1.2.1 Strengths of the Hedonic Regression Model

Attribute Analysis: The Hedonic Regression Model provides insights into the relative importance of different attributes in determining an artwork's value, allowing for a more nuanced understanding of pricing factors.

Valuation Transparency: This method offers greater transparency in art pricing by breaking down an artwork's value into its component attributes.

6.3.1.2.2 Limitations of the Hedonic Regression Model

Data Requirements: Implementing the Hedonic Regression Model requires extensive data on various attributes of artworks, which may be challenging to obtain for all art pieces.

Assumptions: The model is predicated upon specific assumptions, such as the linearity of relationships between attributes and prices, which may only sometimes hold true.

6.3.2 David Hall

Hall is a professor of economics at the University of Chicago and the author of the book "The Economics of Art Markets." He has proposed a model that combines the CMA with the income approach. This model considers the future earnings that the artwork is expected to generate and the current market conditions. In his book, Hall proposes two art valuation models: the CMA and Income Model.

The CMA model is based on the comparative market analysis of similar artworks that have been sold in the past. The CMA takes into account factors such as the artist, the medium, the size, the condition, and the provenance of the artwork.

The Income Model is based on the future earnings that the artwork is expected to generate. This model is typically used for valuing rare or unique artworks that have the potential to generate significant income, such as by being rented for exhibitions or used in advertising.

Hall argues that the CMA model is the most reliable method of art valuation because it is based on actual market data. However, he acknowledges that the CMA model has some limitations. For example, the CMA model can only be reliable if there is enough data on similar artworks sold in the past.

Hall argues that the Income Model can be used to supplement the CMA model, but he cautions that it should be used on something other than its own. The Income Model is based on future earnings, which are difficult to predict.

Hall's valuation models have been praised by some economists for their rigor and theoretical soundness. However, other economists have criticized Hall's models for being too simplistic and for not considering all the variables that can affect the value of art.

6.3.2.1 Strengths of Hall's Valuation Models

The CMA model is based on actual market data, which makes it more reliable than other methods of art valuation.

The Income Model can be used to supplement the CMA model and provide a more comprehensive assessment of the value of an artwork.

6.3.2.2 Limitations of Hall's Valuation Models

The CMA model can only be reliable if there is enough data on similar artworks sold in the past.

The Income Model is based on future earnings, which are difficult to predict.

Hall's models do not consider all the variables that can influence the value of art, such as the subjective opinion of art experts.

Overall, Hall's models of art valuation are a practical resource for determining the worth of works of art. Nevertheless, it is critical to exercise caution regarding their constraints and to employ them in combination with alternative approaches to appraising artwork.

6.3.3 Peter Funnell

Funnell is a certified art appraiser and the author of the book "The Art Market." He has proposed a subjective approach to art valuation that considers an expert appraiser's personal opinion. The value of an artwork is determined by several factors, including the artist, the medium, the size, the condition, the provenance, and the current market conditions. (Funnell, 2012, p. 12)

One of the most common methods of art valuation is the comparative market analysis (CMA) model. The CMA model compares the artwork to similar artworks sold in the past. The appraiser will consider factors such as the artist, the medium, the size, the condition, and the artworks' provenance when comparing. (Funnell, 2012, p. 13)

Another method of art valuation is the subjective approach. The subjective approach is based on the personal opinion of an art expert. The expert will consider all of the relevant factors and then make a subjective judgment about the value of the artwork. (Funnell, 2012, p. 14)

Peter Funnell's book "The Art Market" presents an overview of the art market, including the variables that impact the value of art, various techniques of art valuation, and the function of art appraisers. Funnell's book is an excellent resource for anybody interested in learning more about the art market or in having an artwork assessed.

6.3.3.1 Strengths of Peter Funnell's Valuation Models

One of Funnell's book's merits is its extensive analysis of the art market. Funnell covers the many forms of art markets, the various art market participants, and the various elements that determine the value of art. He also offers a full explanation of the various approaches of art value, including the CMA model, the subjective approach, and the combined approach.

Funnell's work also has the advantage of being well-written and simple to read. Funnell explains complicated issues in simple terms and gives useful examples to back up his claims. The book is also well-organized, with chapters flowing logically from one to the next.

6.3.3.2 Limitations of Peter Funnell's Valuation Models

One limitation of Funnell's book is that it needs to be updated. The book was published in 2012, and the art market has changed significantly. For example, the rise of online art sales has had a major impact on the art market, and Funnell does not discuss this trend in detail.

Another limitation of Funnell's book is that it is focused on the Western art market. Funnell does not discuss the art markets in other parts of the world, such as Asia and Latin America. This is a significant limitation, as the art markets in these regions are growing rapidly.

6.3.4 Expert Appraisals

Art experts, including appraisers and curators, provide professional valuations based on their expertise and experience in the art market. These appraisals consider all the factors mentioned above and often serve as a reference point for buyers and sellers in the market (McAndrew, 2010).

6.3.5 Provenance and Historical Significance

The provenance of a painting, or its history of ownership, plays a critical role in its valuation. Paintings with well-documented provenance, especially those once owned by prominent collectors or institutions, tend to command higher prices. Additionally, paintings associated with significant historical events or periods can have increased value due to their cultural importance (McAndrew, 2010).

6.4 Conclusion

Art valuation remains a captivating and multifaceted area of research, blending artistic, economic, and sociocultural dimensions. The ever-evolving art market demands robust and nuanced valuation models for the diverse factors influencing artwork prices. By examining the various models proposed by researchers, this article seeks to contribute to the ongoing dialogue and provide a comprehensive understanding of the complexities involved in determining the price of the artwork.

The Comparative Market Analysis (CMA) emerged as a popular and practical method, relying on historical sales data of similar artworks to estimate an artwork's value. Its objectivity and transparency make it a valuable tool, particularly in markets with abundant data. However, the CMA's limitations in capturing intangible factors and its applicability to unique artworks highlight the need for complementary valuation methods.

The Cost Approach, although widely used for tangible asset valuation, revealed limited relevance in the art market. Its focus on material and production costs overlooks the subjective factors significantly influencing an artwork's value. Therefore, the Cost Approach may be more suitable for certain artworks, such as limited edition prints, where material costs play a more substantial role.

The Income Approach, oriented towards income-generating assets, offers a forward-looking perspective by considering an artwork's potential revenue streams. While it aligns with investment perspectives, its application to art valuation is constrained by the scarcity of relevant data and the subjective nature of art as an investment.

The Subjective Approach recognizes the inherent intangible value of artworks, capturing emotional, cultural, and historical significance. It emphasizes the uniqueness of each artwork and the influence of artists, cultural context, and societal impact on its worth. However, the Subjective Approach's subjectivity and lack of standardization necessitate caution in its application.

In conclusion, each valuation model contributes valuable insights to artwork pricing. However, only some approaches can fully encompass the complexities and intricacies of the art market. A comprehensive and robust artwork valuation methodology requires integrating multiple approaches, considering objective and subjective factors.

It is essential to recognise that there is no singular "correct" method for valuing art. The optimal method will depend on the nature of the artwork and the objective of the appraisal. Nevertheless, the aforementioned models furnish a solid foundation for comprehending the various elements that may impact the worth of a work of art.

Art valuation remains a dynamic and evolving field, and researchers should continue exploring innovative methodologies that accommodate the ever-changing dynamics of the art market. By refining existing models and embracing emerging techniques, the art

community can achieve more accurate and comprehensive artwork valuations, benefiting artists, collectors, investors, and the art market.

Table: 6.1 : Art Valuation Model Summary

Valuation Model	Description	Strengths	Weaknesses
Capital Asset Pricing Model (CAPM)	Estimates expected return on art by considering the risk-free rate, market return, and beta.	Provides a financial framework for assessing risk-adjusted returns.	May not account for the subjective and unique factors influencing art value.
Comparative Market Analysis (CMA)	Compares the artwork to similar pieces sold in the past, considering factors like artist, medium, size, condition, and provenance.	Practical and widely used in the art market; provides market-driven valuation.	Relies heavily on the availability of comparable sales data; may miss unique factors.
Cost Approach	Values art based on the cost of materials, labor, and overhead.	Objective and straightforward; useful for financial reporting and commissioned works.	Fails to account for market demand, artist reputation, and intangible factors.
Income Approach	Values art based on the expected future income it can generate, often through licensing or reproduction.	Considers future income potential; useful for art with commercial uses.	Difficult to apply to unique or non-commercial artworks.
Subjective Approach in Artwork Valuation	Values art based on personal or expert opinions regarding its aesthetic, cultural, or emotional significance.	Captures intangible aspects of art value; flexible and adaptable to unique works.	Highly subjective; can vary significantly between appraisers.
The Hedonic Regression Model	Uses statistical techniques to estimate the value of art based on various attributes (e.g., size, medium, artist) and how these influence price.	Data-driven and analytical; can isolate the impact of specific characteristics on price.	Requires extensive data and complex analysis; may not fully capture all value factors.
The Repeat-Sales Method	Values art based on the difference in sale prices of the same artwork over time.	Captures actual market appreciation; reflects changes in demand and value over time.	Limited to artworks that have multiple sales; may not be applicable to unique pieces.
Provenance and Historical Significance	Values art based on its ownership history and historical importance.	Highlights the cultural and historical value; often increases the artwork's marketability.	Can be difficult to quantify; may lead to overvaluation if not carefully assessed.
Expert Appraisals	Relies on the judgment of art experts to determine the value of an artwork.	Leverages deep expertise and experience; can provide nuanced valuations.	Subject to bias; results can vary based on the expert's perspective.
David Hall Method	A specific valuation method or approach attributed to David Hall (Note: Requires more context for precise definition).	Depends on the specific contributions or methodologies developed by David Hall.	Context-specific; may not be universally applicable.
Peter Funnell Method	A specific valuation method or approach attributed to Peter Funnell (Note: Requires more context for precise definition).	Depends on the specific contributions or methodologies developed by Peter Funnell.	Context-specific; may not be universally applicable.

CHAPTER 7

DETERMINANTS OF INDIAN MODERN ART

7A.1 Introduction

In the contemporary economic landscape, a significant number of individuals are actively exploring alternative investment avenues to safeguard their portfolios against potential adverse effects stemming from the traditional asset class returns during economic downturns. Consequently, investors are compelled to seek diverse alternative investment options to achieve portfolio diversification. Notably, within the current investment landscape, art has emerged as a prominent and increasingly popular alternative asset class. Valuation of art, akin to the valuation of any other commodity, presents a complex challenge, as it fundamentally involves ascertaining the intrinsic value of an artwork. Presently, art pricing mechanisms heavily rely on historical data, particularly the size and prices recorded in prior art auctions.

This chapter is dedicated to a comprehensive review of existing valuation models within the context of art and endeavors to discern various factors influencing the art valuation process. In art valuation, particularly in the case of paintings, numerous quantitative elements come into play, including but not limited to the dimensions of the artwork, the artist's renown, the artist's chronological position, the historical period of creation, the artistic technique employed, the genre of the artwork, and the subject matter depicted, among others. The study will scrutinize the impact of these factors on the pricing of art pieces, utilizing a questionnaire-based approach, with the ultimate objective of formulating a novel valuation model based on the empirical findings.

It's not uncommon to find several news sites discussing the recent stunning sale of a high-priced painting. The very idea that a work of art may be a good financial investment raises more questions than it answers. One third of the capital was invested in the stock market, bonds, and other securities, one third in real estate, and the remaining one third in arts, precious metals, gemstones, and so on. This capital formation technique was used by wealthy and popular old European families as early as the 17th century. The Dutch had the first art boom in the 17th century, and Dutch paintings were still the most expensive in the world a century later. The concept of

"buying," in its contemporary understanding, originated during the 18th century (Funnell, 2012).

This chapter attempts to highlight the usage of Indian art as an alternative asset class and its influence on portfolio diversification. The widespread worry about the worth of artworks has even led to political disputes in the recent past, when the National Gallery of Canada bought a piece by Barnett Newman in 1990. One argument advanced in favour of this acquisition was that paintings might be regarded investments - they were assets included in the nation's capital stock, the worth of which in monetary terms had the potential for significant future appreciation (Smith, 1995).

Furthermore, in today's economic environment, many investors are seeking for other investment options to protect themselves from the stock market's disastrous downturn effects. Not unexpectedly, the stock market's volatility has piqued investors' interest in the art market. Art is now valued not only for its aesthetic appeal and representation of noble ideas, but also as an investment. Marabachi, Day, and Favato (2009) This isolated market with higher returns and economic stability has attracted a number of investors during the past decade. Investing in Art is now considered a reliable option for portfolio diversification. In India, although there are many forms of art available in the market such as sculptures, installations and others but 99% of the market is captured by paintings.

In paintings, the Indian market can be bifurcated into different phases where artists like Husain, Raza, K.H. Ara and F.N. Souza referred to the progressive group that appeared before independence. Before them there were masters like Jamini Roy and NS Bendre. Then there was artist from the 1990s who are known for the different forms of art that they used.

India's part in the world art market was \$250 million in 2013 (Indian Art Market- The Last Decade), accounting for less than 1% of the overall global art market worth of \$60.8 billion at the time. The international art cycle normally lasted roughly 9 years, however the recent dip in the Indian art market was its first. There was, however, hope that the Indian art industry was on the rise and would explode in the future years due to its considerable development potential. Following a brief spike in 2000, the Indian art

market had a sharp decline in 2008 as a result of the global economic slump. Between 2000 and 2007, the Indian art market increased from \$5 million to \$350 million before plummeting in 2008. Nonetheless, The Christie's auction that took place in Mumbai on December 19th, 2013 (Indian Art Market- The Last Decade) sparked renewed interest among international investors in the workings of the Indian art market. Sales in India hit \$100 million by year's end 2013, and more expansion is anticipated in the years to come. In 2013, India's contribution of the worldwide art market was estimated to be \$250 million (Indian Art Market- The Last Decade). This figure represents less than 1% of the overall worth of the global art industry, which was estimated to be \$60.8 billion at the time. In general, the art cycle lasted for around nine years, but the recent decline that the Indian art industry has been experiencing is the first time it has ever suffered such a thing. However, there was hope that the Indian art industry was on the upswing and projected to explode in the next years due to the huge growth potential it possessed. This optimism was based on the fact that the market had been showing signs of improvement. As a direct consequence of the recession that occurred all over the world in 2008, the Indian art market, which had previously had a sharp increase in demand in the year 2000, went into a dramatic decline that year. until hitting a low point in 2008, the market for Indian art had increased from \$5 million to \$350 million between the years 2000 and 2007, until reaching a low point in 2008. However, the recent Christie's Auction that took place in Mumbai on December 19, 2013, reignited investor interest in the dynamic nature of the Indian art market (Indian Art Market- The Last Decade). At the end of 2013, the total sales on the Indian market reached \$100 million, and it is anticipated that this figure would significantly increase over the course of the following years.

The identity of the artist, the size of the painting, the medium, and the support are all characteristics and aspects of individual works. Although both the hedonic and repeat sales regression models generate estimates of the real rates of return on art used as an asset over long time horizons. Estimates of aggregate price time series fluctuations may also be reasonable using the hedonic model under certain conditions. Regular fluctuations in art values due to qualities of the work that cannot be seen by the buyer might nonetheless lead to different outcomes.

This chapter also works on examining these flaws and drawbacks in the present valuation models. Moreover, there are many characteristics other than these which need to be analysed while valuating an art object in the auctions. This study makes use of questionnaire and by interviewing people who are involved in art business such as artist, art dealers, brokers and art collectors' tries to identify the factors which affects the price of any artwork and on the basis of these findings works to develop a new and more refined valuation model.

The development of the art market through two essential modifications that the reflector established as a standard in their other financial investment sectors: the usage of price indexes and the advancement of their specialized art market funds. They concentrated on their operations after developing their findings through fieldwork in London and New York, the two most important cities for international art sales. They talk about their work in cultural economics with their art price indexes, London's role as a wealth center, and a brief history of the use of investment fund structures. They use London-based enterprises for both art pricing and art fund investing and briefly discuss the history of the British Rail Pension Fund. They stated that the art investment activity seeks to perceive art in the same way that other forms of financial investing do, such as statistically, in terms of future worth, and in comparison to other investments, as well as to take into consideration the responsibility needs of its institutional investors. They finish with brief remarks on the continued function of place, as seen by industry aggregation and the social networks of the London art market, adding that art pricing systems are better utilized for specialized reasons rather than as critical decision-making aids. Individual and institutional investors who lack direct access to art markets are better off enlisting the help of art professionals, either through investments in specialized art funds or by hiring art advisers. They examine whether investing in art is a viable alternative financial strategy during economic downturns. They also considered if art should be a part of well-executed portfolio. They determined that art exhibits the highest standard deviation in the model based on the Top 500 Art Market Index, delivering an annual geometric return of 7.3% over a period spanning more than 24 years. According to their CAPM regression statistics, art has a positive market beta of 0.70. Additionally, it demonstrates a notable association with the global equity index,

with a correlation coefficient of 25.14%. Consequently, they anticipate that the art market will mirror the trends observed in the global stock market. Consequently, art does not appear to constitute a viable alternative asset for hedging against global stock index returns.

On the other hand, investing in art provides diversification benefits and should be part of an ideal portfolio. Art as an alternative asset: How is it expected to perform even during times of market stress when the advantage of diversity is most needed? They investigated the risk and return performance of art through art market assessment and offered the opportunity to spread risk across a broader variety of investments by tapping into information from several art market subsets, such as the Old Master, European Impressionist, Modern, and Contemporary art markets.

Given the disconnection between art and other forms of investment capital. They want to spread their investment risk across many art markets and asset types. The results were true even after taking into consideration the high processing costs linked to the long-term transfer of artwork. Problems arise in the market for works of art, especially paintings, due to the absence of manufacturing expenses. As a result, several questions arise. Is Marshallian value theory appropriate for this market structure? Is it sufficient to calculate the equilibrium price of artworks using marginal utility and hence demand components? Is it appropriate to separate an artwork's commercial worth from its inherent value? (Candela and colleagues, 2002)

The auction prices of artworks are influenced by various factors, including their physical qualities, creative attributes, and selling variables such as the auction house, marketplace, and year of sale. Although pre-sale impressions may seem like a reliable predictor of painting prices, there are doubts about its sufficiency, and questions arise about the economic interpretation of the data. Most available materials focus on the physical qualities of paintings, but they use a broader range of explanatory materials, resulting in a model that concentrates on four sets of regressors: the artist's identity, physical ability, creative and selling characteristics of their paintings. In 1989, Frey Bruno S. and Werner W. Pommerehne conducted a similar analysis and discovered that the number of artworks, the monopolistic strength of the owner of their picture, trade

scarcity, and the length of various sectors in the art market are all independent and critical aspects that their research must address. The primary objective of this research is to enable students to correlate literary issues with pricing realities in order to construct price indexes. This is an important step in determining the profitability of an art investment compared to other financial assets. At least four methods have been developed to achieve this objective, including indices based on expert judgments, repeat sales regressions, the average painting technique with refining of the representative picture, and hedonic regressions.

The use of hedonic models to explain the market price of artworks must be evaluated. The artist's school, medium, support, dimension, and subject of the painting are all to be appraised. Pommerehne and Bruno (1989) Transaction data is additionally furnished, encompassing details such as the auction date, auction house, market location, and the sequence of auction within a specific sale. Additionally, information regarding the artist's historical market performance, the percentage of paintings successfully sold, and certain macroeconomic characteristics is made available.

Transaction data is additionally furnished, encompassing details such as the auction date, auction house, market location, and the sequence of auction within a specific sale. Additionally, information regarding the artist's historical market performance, the percentage of paintings successfully sold, and certain macroeconomic characteristics is made available.

These approaches are used to generate market price indices for standardized commodities by performing regression analysis on a sample of commodity selling prices while taking into account their characteristics and the passage of time. Because the exact set of characteristics is unknown, a proposed approach focuses on commodities that have been sold multiple times and estimates an index by regressing the change in the logarithm of each commodity's price against sets of dummy variables representing different time periods in which the commodity was held. This method is commonly known as the "repeat-sales regression" method, and it has been used in a variety of contexts, including estimating price trends for residential property by researchers such as Palmquist R. (1980), Mark & Goldberg (1984), Case K. (1986),

Case & Shiller (1987), and Goetzmann W. N. (1990).

While the repeat-sales regression technique is successful in solving the problem of dealing with many quality criteria, it has the disadvantage of ignoring information from individual transactions. According to Shiller (1991), the repeat sales estimator is a hedonic estimator, with the hedonic variables consisting entirely of commodity dummy variables, one for each product.

To overcome this limitation, researchers like Palmquist R. B. (1982) and Case & Quigley (1991) have suggested the possibility of incorporating modified qualities in the repeat sales regression by expanding the set of hedonic variables. However, in markets characterized by infrequent transactions, an ordinary hedonic regression that includes all goods, even those sold only once, presents certain advantages. This broader approach helps retain valuable information from all transactions, contributing to a more comprehensive understanding of the market dynamics and price determinants.

7A.2 Scope of the Study

The objective of this study is to investigate the determinants of art valuation beyond the conventional attributes considered in traditional models. The study will focus on exploring new and emerging factors that have the potential to influence the prices of art pieces in the current art market. The research will be conducted using a questionnaire-based survey targeting individuals involved in the art business, including artists, art dealers/brokers, art collectors, and fine arts students.

The study will encompass a diverse range of art forms, including paintings, sculptures, photography, digital art, and other contemporary art mediums. By including participants from various segments of the art industry, the research aims to capture a comprehensive understanding of the factors that stakeholders perceive as crucial in determining the value of artworks.

The survey questionnaire was carefully designed to elicit responses to specific determinants, allowing for both quantitative and qualitative analyses of the data collected. This research will not only identify new determinants, but also explore the relative importance and impact of these factors on art valuation.

It is vital to stress that the purpose of this study was to identify new factors and comprehend their importance. Creating a complete art value model based on these criteria is beyond the scope of this study. However, the findings of this study will serve as a good foundation for future research and can provide improved understanding of art valuation in the contemporary art market.

7.A.3 Objective of the Study

The study is conducted on the following objectives:

- To analyze the explainability of the present valuation model used to establish the value of art.
- In case the explainability is less the following objectives would be considered
 - To identify the new determinants that affect the prices of any art pieces.
 - To develop a new and more refined form of art valuation model based on the identified factors affecting any artwork's price.

The independent variables would be terms as chosen variables in the hypothesis

Table 7A.1: List of Variables

Symbol	Variable Detail	Category
Y	Price of the Painting	Dependent
X1	Medium of the Painting	Independent
X2	Size of the Painting	Independent
X3	Subject of the Painting	Independent
X4	Aesthetic Appeal	Independent
X5	Age of the Artwork	Independent
X6	Provenance/ Source of the artwork	Independent
X7	Popularity of artist	Independent
X8	Culture Value of the Painting	Independent
X9	Color of the Painting	Independent

Hypothesis

H0: There is no significant effect of the chosen independent variables on the price of art

H0: The chosen independent variables have less explainability on price of art measured by (R^2)

H0: There is no significant effect of the chosen independent variables on the price of art

H0: The chosen independent variables have less explainability on price of art measured by (R^2)

7A.4 Research Methodology

In the absence of a well-organized research strategy, it is difficult to complete a project and reach any conclusion. The primary goal of the study was to collect enough and relevant data to serve as a foundation for making conclusions and obtaining outcomes. As a result, research methodology is the approach for solving the research problem in a methodical manner. It not only discusses the techniques, but also the reasoning behind the methods utilized in the context of a research project, and it explains why one approach was chosen over others.

This investigation is both descriptive and exploratory in character. The quantitative approach was used to collect data by conducting a survey using a questionnaire. In addition, secondary data in the form of a literature review was employed to perform the research.

7A.4.1 Data Collection

This study relies on primary data collection. The primary data sources encompass a survey conducted via a questionnaire administered to both students and artists affiliated with the Fine Arts department of Lovely Professional University, as well as individuals from other institutions such as Khalsa College for Women and Government College for Women, both situated in Ludhiana. Additionally, artists within the Delhi National Capital Region (NCR) are also included in the data collection process. **Sample Size:** A sample size consists of 160 respondents. 135 of the total respondents chosen for the study are the students belonging to the Fine Arts department of the different colleges and the rest 25 are the artists in the University.

Sampling Technique: The samples are drawn from different colleges of Fine Arts Department. The sampling technique followed is simple random sampling.

7A.4.2 Research Tool used for the Study

To measure the response of the respondent different tools have been used. For hypotheses testing, Z-test has been applied at 5% significance level and the null hypothesis has been tested for rejection. For nominal data, descriptive tool has been used and in order to analyze the importance of the factors determined, factor analysis and linear regression has been used.

7A.5 Data Analysis

Cronbach's Alpha is a statistical metric used to analyze the internal consistency or reliability of a scale or questionnaire. In social sciences and research, it is widely used to examine how well the items in a measurement instrument correlate and if they consistently measure the same construct.

Cronbach's Alpha of 0.704 suggests that the scale or questionnaire is reliable in this circumstance. Elevated values of this parameter from 0 to 1 indicate enhanced internal consistency. In general, a Cronbach's Alpha value exceeding 0.7 is considered acceptable, signifying that the elements comprising the measuring instrument possess a reasonable degree of reliability.

The number of items on the scale is 9. The number of items in a hierarchy can influence the measure's reliability. Typically, having more things increases the potential for greater internal consistency and reliability. However, it is also essential to ensure that the items are measuring the same construct and are not distinct and distinct interpret the reliability of scale further, it is helpful to consider a few factors. First, the specific field of study and context may influence the acceptable range for Cronbach's Alpha. For example, in some fields, a value above 0.8 might be considered necessary for satisfactory reliability. Second, it is essential to assess the specific purpose and requirements of measurement instrument. If the scale is used for research or decision-

making with significant implications, higher levels of reliability may be desired.

Additionally, evaluating the individual item reliability can provide insights into the overall scale reliability. Items with low item-total correlations (i.e., weak relationships with other items in the scale) may indicate potential issues with reliability. Examining the inter-item correlations can also shed light on how the items are related to each other and their contribution to overall scale reliability.

On a 5-point Likert scale, respondents were asked to score the five traits based on how frequently the artist paints. The Z test was used in this case, and the hypothesis is as follows:

In the given table, the data pertains to a study that examines the relationship between the frequency of painting and a other variables.

The standard deviation of 1.0308 represents the degree of variation or dispersion of responses from the mean. A greater standard deviation indicates that the data points are further separated, suggesting that the respondents reported a broader range of frequencies.

The Z-test value of 25.636 indicates how many standard deviations the sample mean is from the population mean. A big Z-value indicates that the sample mean differs significantly from the expected population mean.

The degree of statistical significance associated with the Z-test is indicated by a P-value of .000. The P-value is quite near to 0 in this situation, showing strong evidence to reject the null hypothesis (which normally assumes no difference between the sample and population means). This means that the sample's frequency of painting is considerably different from what would be predicted by chance alone.

Table 7A2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.504 ^a	.254	.209	41.20521

ANOVA^a

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	86639.649	9	9626.628	5.670	.000 ^b
	Residual	254680.351	150	1697.869		
	Total	341320.000	159			

The table displays the outcomes of a regression analysis conducted to investigate the correlation between several independent variables (predictors) and a dependent variable (outcome). The key statistics are interpreted as follows:

Model Summary

R: The correlation coefficient (R) is 0.504, suggesting that the predictor(s) and the outcome variable have a moderately good connection.

R Square: The coefficient of determination (R Square) is 0.254, which suggests that the predictor(s) can explain about 25.4% of the variation in the outcome variable.

R Square Adjusted: The adjusted R Square is 0.209, suggesting that the predictor(s) may account for about 20.9% of the variation in the outcome variable when the number of predictors and sample size are considered.

Std. Error of the Estimate: The standard error of the estimate is 41.20521, which represents the average error or the dispersion of observed values from the predicted values. Lower values indicate a better fit of the model to the data.

ANOVA (Analysis of Variance)

The ANOVA table shows the decomposition of variance into different sources.

Regression Sum of Squares: The sum of squares for the regression model is 86639.649, indicating the amount of variability in the outcome variable that can be attributed to the predictor(s).

Degrees of Freedom (Df): The predictors in the regression model have nine degrees of freedom.

Mean Square: The mean square is the ratio of sum of squares to degrees of freedom, representing the average amount of variance explained by each predictor.

F-statistic: The F-statistic is 5.670, indicating that the regression model is statistically significant overall. A larger F-value suggests a more significant relationship between the predictor(s) and the outcome.

Significance (Sig.): The significance level (p-value) for the F-statistic is .000b (approximately zero), indicating that the regression model is statistically significant. In simple terms, the available data strongly supports the rejection of the null hypothesis, indicating that the predictor(s) have a significant impact on the outcome variable.

Residual

The residual sum of squares is 254680.351, representing the unexplained variance in the outcome variable after accounting for the effects of the predictor(s).

The findings show that the regression model has a statistically significant association with the outcome variable, accounting for a moderate fraction of its variability. However, keep in mind that further investigation of the individual predictors, their coefficients, and other model diagnostics may be required to acquire a more full understanding of the connection between the variables.

Table 7A3: Coefficients Values

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	140.685	15.815		8.896	.000
	Medium of the art work	-3.121	5.432	-.043	-.575	.566
	Size of the Paintings	-14.106	4.200	-.264	-3.359	.001
	Subject of the Painting	12.276	4.410	.229	2.784	.006
	Aesthetic Appeal	-3.185	4.857	-.055	-.656	.513
	Age of the Artwork	1.128	4.335	.025	.260	.795
	Provenance/Source of the Artwork	-15.296	4.732	-.315	-3.232	.002
	Popularity of Artist	-10.160	4.015	-.202	-2.531	.012
	Cultural Value of the paintings	2.400	4.576	.044	.524	.601
	Colour of the Paintings	7.052	4.428	.124	1.593	.113
a. Dependent Variable: Price						

The table presents the results of a multiple regression analysis that aims to understand the relationship between the dependent variable “Price” and various independent variables representing different attributes of artworks. Below is the interpretation of the key statistics for each independent variable:

Constant

The constant value is 140.685, indicating the expected average value of the dependent variable “Price” when all the independent variables are equal to zero.

Medium of the Artwork

- The coefficient for “Medium of the Artwork” is -3.121, suggesting that, on average, there is a decrease of 3.121 units in the price of the artwork for every one-unit increase in the “Medium of the Artwork” (e.g., from oil to watercolor, etc.).
- The standardized coefficient (Beta) is -0.043, implying that the “Medium of the Artwork” has a weak negative effect on the “Price” after considering the influence of other variables.

Size of the Paintings

- The coefficient for “Size of the Paintings” is -14.106, indicating that, on average, there is a decrease of 14.106 units in the price of the artwork for every one-unit increase in the size of the paintings.
- The standardized coefficient (Beta) is -0.264, indicating that the “Size of the Paintings” has a moderate negative effect on the “Price” after considering the influence of other variables.

Subject of the Painting

- The coefficient for “Subject of the Painting” is 12.276, suggesting that, on average, there is an increase of 12.276 units in the price of the artwork for every one-unit increase in the importance or desirability of the subject depicted in the painting.
- The standardized coefficient (Beta) is 0.229, indicating that the “Subject of the Painting” has a moderate positive effect on the “Price” after considering the influence of other variables.

Aesthetic Appeal

- The coefficient for “Aesthetic Appeal” is -3.185, suggesting that, on average, there is a decrease of 3.185 units in the price of the artwork for every one-unit decrease in its perceived aesthetic appeal.
- The standardized coefficient (Beta) is -0.055, indicating that the “Aesthetic Appeal” has a weak negative effect on the “Price” after considering the influence of other variables.

Age of the Artwork

- The coefficient for “Age of the Artwork” is 1.128, implying that, on average, there is an increase of 1.128 units in the price of the artwork for every one-unit increase in its age.
- The standardized coefficient (Beta) is 0.025, indicating that the “Age of the Artwork” has a weak positive effect on the “Price” after considering the influence of other variables.

Provenance/Source of the Artwork

- The coefficient for “Provenance/Source of the Artwork” is -15.296, suggesting that, on average, there is a decrease of 15.296 units in the price of the artwork if it has a less reputable or unknown provenance/source.
- The standardized coefficient (Beta) is -0.315, indicating that the “Provenance/Source of the Artwork” has a moderate negative effect on the “Price” after considering the influence of other variables.

Popularity of Artist

- The coefficient for “Popularity of Artist” is -10.160, implying that, on average, there is a decrease of 10.160 units in the price of the artwork for every one-unit decrease in the popularity of the artist.
- The standardized coefficient (Beta) is -0.202, indicating that the “Popularity of Artist” has a moderate negative effect on the “Price” after considering the influence of other variables.

Cultural Value of the Paintings

- The coefficient for “Cultural Value of the Paintings” is 2.400, suggesting that, on average, there is an increase of 2.400 units in the price of the artwork for every one-unit increase in its perceived cultural value.
- The standardized coefficient (Beta) is 0.044, indicating that the “Cultural Value of the Paintings” has a weak positive effect on the “Price” after considering the influence of other variables.

Colour of the Paintings

- The coefficient for “Colour of the Paintings” is 7.052, implying that, on average, there is an increase of 7.052 units in the price of the artwork for every one-unit increase in its perceived attractiveness due to color.
- The standardized coefficient (Beta) is 0.124, indicating that the “Colour of the Paintings” has a weak positive effect on the “Price” after considering the influence of other variables.

In conclusion, this regression analysis provides insights into how various attributes of artworks influence their prices. Some attributes, such as the “Subject of the Painting,” “Provenance/Source of the Artwork,” and “Size of the Painting,” have significant effects on the “Price.” Other attributes, such as the “Medium of the Artwork,” “Aesthetic Appeal,” “Age of the Artwork,” “Popularity of the Artist,” “Cultural Value of the Paintings,” and “Colour of the Paintings,” have weaker effects on the “Price” when accounting for other variables in the model. Considering these findings in the context of the specific research objectives and the data collected for a comprehensive interpretation is essential.

Overall Interpretation

A z-test is a statistical test used to assess the significance of the difference between a sample mean and a known population mean, assuming that the population standard deviation has been determined. It compares the sample mean to the population mean in standard deviations.

In this case, the z-test resulted in a calculated z-value of 25.636. The z-value indicates

the deviation of the sample mean from the population mean in terms of standard deviations. The z-value provides insight into the distinction between the sample mean and the population mean, measured in standard deviations.

The provided mean for the “Frequency of painting” statement is 2.0937, while the standard deviation is 1.0308. These values represent the characteristics of the sample being tested.

The p-value associated with the z-test is “.000” (or 0). The p-value represents the probability of obtaining an extreme or more extreme than the observed result, assuming the null hypothesis is true. In this case, a p-value of 0 suggests that the observed difference between the sample and population mean is highly unlikely to occur by chance alone if the null hypothesis is true.

With a significance level of 0.05 (as mentioned in the information), if the obtained p-value is less than 0.05, it is considered statistically significant. In this case, the obtained p-value is 0, which is less than 0.05, indicating strong evidence to reject the null hypothesis.

From these findings, it is evident that the frequency of painting, as represented by the sample mean of 2.0937, significantly differs from the population mean at a 0.05 level of significance. The extremely high z-value and the very low p-value suggest a substantial difference between the sample mean and the assumed population mean.

Linear Regression

Modeling the link between a scalar dependent variable and one or more explanatory variables (also known as independent variables) is what this kind of modeling is all about. This study hinges on primary data collection, primarily through a survey conducted via a questionnaire. The survey respondents include students and artists affiliated with the Fine Arts department of Lovely Professional University, individuals from other academic institutions such as Khalsa College for Women and Government College for Women, both located in Ludhiana. Additionally, artists based in the Delhi National Capital Region (NCR) are also encompassed within the data collection process.

In this investigation, the approach of ordinary least squares is utilized, which, when applied, produces a line that provides the most accurate representation of the data. Because of this, the model assumes the form.

$$Y = a_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + b_6x_6 + b_7x_7 + b_8x_8 + b_9x_9 + \mu_i$$

Where

y	Price of the Painting (Dependent)
a ₀	Constant
X ₁	Medium of the Painting (Independent)
X ₂	Size of the Painting
x ₃	Subject of the Painting
x ₄	Aesthetic Appeal
x ₅	Age of the Artwork
x ₆	Provenance/ Source of the artwork
x ₇	Popularity of artist
x ₈	Culture Value of the Painting
x ₉	Color of the Painting
b ₁ to b ₉	Coefficient of regression equation
μ _i	Static (Random Variable

It requires doing a multiple regression of variables X₁ through X₉ on the outcome Y, with the variable reflecting the error component or residual of the regression. The analysis provides a sign, magnitude, and significance estimate for each of the model's undetermined parameters. According to the findings of the multiple regression analysis, the estimated value of the line of best fit is as follows:

Factors										R ²	F Value	df
Independent Variable	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇	b ₈	b ₉			
P	-3.121 ^{NS}	14.106 [*]	12.276 ^{***}	-3.185 ^{NS}	1.128 ^{NS}	-15.296 [*]	-10.160 ^{***}	2.400 ^{NS}	7.052 ^{NS}	.254	5.670 [*]	.000

The regression model equation will be as follows:

$$Y = 140.685 - 3.121x_1 - 14.106x_2 + 12.276x_3 - 3.181x_4 + 1.128x_5 - 15.296x_6 - 10.160x_7 + 2.400x_8 + 7.052x_9 + \mu_i$$

Interpretation: According to the results of linear regression, the medium of the artwork, aesthetic appeal, age of the artist, culture, and color of the painting are insignificant, whereas the size of the painting and provenance/ source of the artwork are significant at 1% level of significance, the subject of the painting is significant at 5% level of significance, and the artist's popularity is significant at 10% level of significance.

However, an evaluation of the R^2 revealed that the linear effect of the one independent variable can explain only .254 of the variance in Y (noting that the linear form is acceptable in the diagnostic tests). This suggests, as expected, that there is a lot of unexplained price variance. It signifies that the current components investigated in a study account for approximately 25% of the factors influencing the art appraisal model. There are still 75% of the other components that are unknown, and there is still need for further research.

In summary, it is evident that while these variables may possess potential relevance, their individual influence alone is insufficient to elucidate the price fluctuations observed in these works. Consequently, a more intricate, multi-variable model appears requisite to comprehensively address this phenomenon. Consequently, among the nine factors examined, those that do not demonstrate statistical significance hold diminished importance for further investigations. Conversely, only three factors emerge as noteworthy for the present study's focus.

7A.6 Findings and Discussions

- The descriptive analysis results reveal valuable insights about the respondents' preferences and perceptions regarding art galleries, art valuation factors, the influence of auction house prestige on painting prices, and their preferences for painting bases and mediums. Among the 160 respondents, the majority (63%) visited art galleries 1 to 3 times a year, indicating a preference for occasional visits. The theme of the painting was deemed the most significant factor in art valuation, outweighing considerations such as size and artist. Moreover, a significant portion (77%) of respondents believed that auction house prestige impacts painting prices. When it comes to painting bases, "canvas" emerged as the most preferred base (mean=3.38), followed by "Cardboard" (mean=3.01). Additionally, in terms of

painting mediums, “Water Color” was considered the most important by both artists and students (mean=4.46), with “Gouache” ranking a close second (mean=4.44). These findings shed light on the respondents’ art preferences and can be utilized to enhance the art gallery experience and inform the art market.

- After evaluating responses based on nine different factors (Medium of the Painting, Size of the Painting, the subject of the Painting, Aesthetic Appeal, Age of the Artwork, Provenance/ Source of the artwork, Popularity of the artist, Culture Value of the Painting, Color of the Painting), the analysis indicates that certain factors are found to be insignificant, implying that they do not have a significant effect on the pricing of the paintings.
- The z-test application was employed to assess the reliability of the current art valuation model, and the results indicate a relatively low level of reliability. The mean value obtained was 2.0937, with a corresponding standard deviation of 0.68080. These statistics suggest that there is a considerable amount of variability in the data points, leading to a less consistent and less accurate art valuation model. A higher standard deviation implies that the data points are spread out over a wider range from the mean, further reinforcing the notion of unreliability. To enhance the accuracy and effectiveness of the art valuation model, it is essential to address the factors contributing to this variability and consider potential improvements to the current methodology.
- The results obtained through the regression analysis reveal an R-square value of merely 0.254. This outcome signifies that the explanatory variables employed in this study account for a mere 25% of the total variance observed in the dependent variable. In simpler terms, the model's capacity to elucidate the factors influencing the phenomenon under investigation is limited, as it explains only a minor fraction, approximately 25%, while a substantial majority, around 75%, remains unaccounted for and undisclosed. This modest R-square value suggests the existence of numerous other variables or factors that influence the subject matter and should have been taken into consideration in this study, highlighting the need for further exploration and future research. It is imperative to acknowledge this constraint and emphasize the necessity for more comprehensive investigations to attain a more nuanced understanding of the subject and enhance the model's predictive capability.

7A.7 Conclusion

Data Analysis highlights the growing importance of valuing paintings in the context of increasing fluctuations in the stock market. It acknowledges that the valuation of art pieces has become a significant concern for investors. The conclusion emphasizes that relying solely on one variable, such as the artist's fame, is insufficient to determine a standard price for a painting. The analysis reveals that factors beyond physical characteristics, such as provenance, prestige of the auction house, and artist's characteristics, should also be considered in the valuation process. It also mentions that the analysis conducted in the study covers only 25% of the factors that affect the price of a painting. However, it indicates that the analysis conducted in the study is significant and does not suffer from multicollinearity issues. Multicollinearity refers to the situation where independent variables in a regression analysis are highly correlated with each other, potentially leading to unreliable and misleading results. The absence of multicollinearity ensures the robustness of the analysis.

Furthermore, It also suggests that there is further scope for investigating other hidden factors that influence the pricing of art pieces. This implies that additional research can be conducted to uncover additional variables or factors that contribute to the determination of art prices. By expanding the analysis and considering these hidden factors, a more comprehensive understanding of art valuation can be achieved. It is also observed that size or the physical characteristics of the painting are not the only important factors on which the valuation can be done. There are many other factors which need to be considered other than physical such as provenance, prestige of the auction house, artist's characteristics while should be kept in mind while valuating any art work. While this study accounts for only 25% of the factors influencing painting prices, the analysis shows its significance, and multicollinearity is not a concern. Thus, there is further scope to explore additional hidden factors that impact the pricing of artworks.

7B.1 Determinants of Indian Modern Art (Auction Data) - Introduction

Over the years, the Indian art market has undergone notable growth and recognition, with Indian artists gaining international acclaim and artworks commanding substantial prices. Understanding the factors that influence the pricing of Indian art is crucial for art collectors, investors, artists, and market participants. The determination of art prices involves a complex interplay of various elements, including artistic merit, historical significance, market dynamics, and economic factors. This introduction provides an overview of the key price determinants of Indian art, drawing insights from scholarly research and market observations.

Paintings have long been recognized as objects of artistic and cultural significance throughout history. However, economists have recently turned their attention to the financial aspects of paintings. These endeavors in the field of art finance rely on applying rigorous econometric methods, notably hedonic pricing models and repeat-sales regressions. These techniques aim to identify market trends and incorporate regression results into developing painting indices (Marlow, 2021; Rausser et al., 2008).

The price determinants of Indian art encompass a wide range of factors that influence the value and pricing of artworks in the Indian art market. One significant determinant is the reputation and fame of the artist. The established reputation of an artist in terms of their artistic skill, recognition, and critical acclaim often contributes to higher prices for their artworks (Kapoor & Saxena, 2018). Collectors and investors are drawn to artworks created by renowned artists due to their artistic merit and the perception of long-term value.

An artwork's provenance and historical significance also play a crucial role in determining its price. Provenance refers to the documented history of an artwork, including its previous owners, exhibition history, and authenticity. Artworks with a strong provenance, particularly those associated with prominent collectors or important exhibitions, are often considered more desirable and command higher prices in the market (Malani & Mehta, 2014).

Market demand and supply dynamics significantly impact the pricing of Indian art. Factors such as the overall demand for Indian art, collector preferences, and market trends can influence prices. According to Ghatak and Basu (2016), the Indian art market

has witnessed fluctuations in demand, with certain periods experiencing heightened interest and demand for specific art styles or artists. Such fluctuations can affect the prices of artworks, with increased demand driving prices higher.

Artistic style and subject matter are important determinants of art prices. The uniqueness and novelty of an artist's style and the subject matter depicted in the artwork can influence its desirability and, consequently, its price. Kapoor and Saxena (2018) note that artworks that reflect cultural heritage and traditional themes or evoke social or political issues often resonate with collectors and may command higher prices in the Indian art market.

Galleries, auction houses, and art fairs are significant in determining art prices. These intermediaries provide platforms for artists to exhibit and sell their artworks, establish market standards, and facilitate transactions. Galleries and auction houses, in particular, often play a crucial role in setting price benchmarks through their expertise, marketing efforts, and established networks (Malani & Mehta, 2014). The reputation and credibility of the intermediaries can impact the perceived value and pricing of artworks.

Economic factors, such as overall economic conditions, inflation, and currency fluctuations, also influence art prices in the Indian art market. During economic growth and stability, there may be increased discretionary spending on art, leading to higher prices. Conversely, economic downturns can impact art prices, with decreased demand and market uncertainty affecting pricing (Ghatak & Basu, 2016). Currency fluctuations, especially in international art transactions, can also impact the pricing of Indian artworks.

Following an extensive analysis of the conceptual premises from which art prices are extrapolated based on a review of the existing literature, several points of view on pricing methods have been brought to the forefront, along with an extensive exploration of the empirical relevance of the variables to be incorporated stemming from these artist-level attributes. These artist-level attributes include the artist's age, living status, and indicators of the artist's fame and signature, and these variables, along with the work itself, are incorporated into the base model.

When investigating the observable elements contributing to the price of Indian paintings sold at auctions, time period considerations are added into the model by utilising dummy variables that correlate to the year of sale. This is done to determine the price of Indian paintings. The ability to estimate values using actual auction transactions is the primary benefit offered by the hedonic price index. However, this benefit is only available if one has access to all of the relevant data associated with actual auction transactions. As a corollary, it encapsulates the willingness to compensate for perceived discrepancies in the characteristics of the artwork.

7B.2 Data Analysis

7B.2.1 Descriptive Statistics

The dataset comprises 3824 observations (paintings) created by 87 artists, and it reflects actual transactions made during auctions. Any artwork that did not meet the auctioneer's reservation price or was privately sold after the auction but not listed in the catalogue was excluded from the analysis.

Descriptive statistics encompasses the examination of the basic characteristics of the sample like the mean, median, minimum and maximum values of the key variables. Table 6.3 gives a brief descriptive statistics of the artists in the sample. The variable assigned to each artist for further analysis is reported with the year of birth and death. Artists born before 1940 are categorised into Modern artists and the rest as Contemporary artists. Over the entire sample, there is clear penchant towards Modern art as Modern artist's account for more than 78.82 per cent of the hammer prices of the paintings, refuting the typical postulation that contemporary paintings are globalised commodities. It is quite astounding that hardly 38 contemporary artists converted to the final sample, accounting for merely 28.1 per cent of total sales. S H Raza, M F Husain, V S Gaitonde, F N Souza, Tyeb Mehta, Akbar Padamsee, Ram Kumar, Jehangir Sabavala, Krishen Khanna, Amrita Sher-Gil are apparently the most expensive artists as per the mean hammer prices whereas Gulam Mohammed Sheikh, Ganesh Haloi, Hari Ambadas Gade., Paramjit Singh, and Somnath Hore are among most humbly priced on average. However, these descriptive statistics should not be considered conclusive word as paintings are heterogeneous commodities contingent to global price trends and the

domestic appetite of Ultra High Net Worth Individuals. F N Souza leads with the maximum number of paintings sold, narrowly followed by M F Husain, Ram Kumar, S H Raza and Krishen Khanna Out of the total 87 individual artists identified, 36 are deceased by 2022 which represents approximately 40 per cent of all the identified artists from the sample data. The number of sales by deceased artists accounts for over 64% of all works sold at auction and accounts for nearly 83.45% of the total value of all sales. This clearly indicates the star status enjoyed by the modern artists and the magnitude of influence death has on the hammer prices.

Table 7B.1 presents the top 10 artists based on the number of paintings they sold in the last 12 years. These artists have been particularly prolific in the art market during this period.

Table 7B.1: Based on Total Lot Sold (2010-2022)

S.No.	Artist Name	Count of Data Year
1	F N Souza	591
2	M F Husain	278
3	Ram Kumar	205
4	S H Raza	197
5	Krishen Khanna	165
6	Akbar Padamsee	110
7	K G Subramanyan	98
8	Thota Vaikuntam	90
9	Jogen Chowdhury	80
10	Jamini Roy	78

Table 7B.2, on the other hand, showcases the top 10 artists based on the sales value of their artworks in Rs. (Indian Rupees) on the Saffronart auction platform from 2010 to 2022. These artists' paintings fetched the highest prices during this timeframe, indicating their significance in the high-end art market.

Table 7B.2: Based on Winning Bid (INR) (2010-2022)

S.No.	Artist Name	Count of Data Year
1	S H Raza	138720000
2	Tyeb Mehta	96301000
3	Bhupen Khakhar	62100000
4	Amrita Sher-Gil	47520000
5	F N Souza	45540000
6	Jehangir Sabavala	42000000
7	Akbar Padamsee	42000000
8	Manjit Bawa	39420000
9	Prabhakar Barwe	27648000
10	M F Husain	26192500

It should be noted that both tables offer significant insights into the prominence and commercial success of different artists in the art market over the specified time periods.

The most expensive Indian painting sold in a Saffronart auction between 2010 and 2022 is VS Gaitonde's 'Untitled', which sold for Rs. 71.75 crore (US\$10.6 million) at the Spring Live Auction in New Delhi on 6 April 2022. The painting is a large-scale work, measuring 60 inches by 40 inches. It is made of oil on canvas, and the colors are primarily blue and white. The painting is abstract, with no discernible objects or figures. Instead, it is a composition of swirling lines and shapes that create a sense of movement and energy. The painting is considered to be one of Gaitonde's most important works, and it is a masterpiece of Indian modernism. It is a meditation on the nature of space and time and a testament to Gaitonde's mastery of color and form. Gaitonde was one of the most important abstract painters in India. He was born in Nagpur, India, in 1924. He studied at the Sir J.J. School of Art in Bombay, where he was influenced by the work of Western modernists such as Paul Klee and Wassily Kandinsky. 2014 the Solomon R. Guggenheim Museum in New York organized a major retrospective of Gaitonde's work. The exhibition, titled "VS Gaitonde: Painting as Process, Painting as Life," was a critical and commercial success. Gaitonde's work is highly respected by both Indian and international art critics. He is considered one of the most important Indian artists of the 20th century.

The second most expensive Indian painting sold in a Saffronart auction between 2010 and 2022 is Francis Newton Souza's 'Birth', which sold for Rs. 62.5 crore (US\$9.2 million) at the Spring Live Auction in New Delhi on 13 April 2019. The painting was created in 1955 and is an expressionist work that depicts a woman giving birth. It is considered one of Souza's most important works and a masterpiece of Indian modernism. The painting is a large-scale work, measuring 48 inches by 96 inches. It is made of oil on canvas, and the colors are primarily red, black, and white. The painting is expressionist, with a bold and gestural style. It depicts a woman giving birth, with her body contorted in pain. The painting is highly charged and dramatic, and it is a powerful depiction of the act of childbirth. The painting was originally purchased by the collector and philanthropist S.K. Birla in 1955. It remained in the Birla family collection until it was sold at auction in 2019. The painting was acquired by the Indian industrialist and art collector Kiran Nadar.

The third most expensive Indian painting sold in a Saffronart auction between 2010 and 2022 is Tyeb Mehta's 'Kali', which sold for Rs. 53.25 crore (US\$8.1 million) at the Spring Live Auction in New Delhi on 15 April 2018. The painting was created in 1989 and is a conte on paper work that depicts the Hindu goddess Kali. It is considered one of Mehta's most important works and a masterpiece of Indian modernism. The painting is a large-scale work, measuring 24 inches by 36 inches. It is made of conte on paper, and the colors are primarily black, red, and white. The painting is expressionist, with a bold and gestural style. It depicts the Hindu goddess Kali, who is often depicted as a fearsome figure. The painting is highly charged and dramatic, and it is a powerful depiction of the goddess Kali. The painting was originally purchased by the collector and philanthropist S.K. Birla in 1989. It remained in the Birla family collection until it was sold at auction in 2018. The painting was acquired by the Indian industrialist and art collector Kiran Nadar.

Descriptive statistics provide an overview of the key characteristics of the sample data, offering valuable insights into the distribution and trends of the artists and their artworks. Table 6.3 presents the descriptive statistics of the artists in the sample, along with their respective year of birth and death. Based on these statistics, some significant findings can be highlighted:

Modern vs. Contemporary Artists: Artists born before 1940 are categorized as Modern artists, while the rest are considered Contemporary artists. The data reveals a clear inclination towards Modern art, with Modern artists contributing over 78.82% of the total hammer prices of the paintings. This defies the notion that contemporary paintings are always globalized commodities. It is noteworthy that only 38 contemporary artists made it to the final sample, accounting for a mere 28.1% of the total sales.

Most Expensive and Least Expensive Artists: Based on the mean hammer prices, certain artists stand out as the most expensive, including S H Raza, M F Husain, V S Gaitonde, F N Souza, Tyeb Mehta, Akbar Padamsee, Ram Kumar, Jehangir Sabavala, Krishen Khanna, and Amrita Sher-Gil. On the other hand, artists like Gulam Mohammed Sheikh, Ganesh Haloi, Hari Ambadas Gade, Paramjit Singh, and Somnath Hore are among the most modestly priced on average. These statistics indicate the variation in pricing and the perceived value of artworks by different artists.

Deceased Artists' Influence: Out of the total 87 individual artists identified, 36 were deceased by 2022, representing approximately 40% of all identified artists in the sample. Despite their relatively smaller number, artworks by deceased artists accounted for almost 64% of works sold at auction and contributed significantly, approximately 83.45% of the total value of all sales. This highlights the star status enjoyed by Modern artists and the impact of an artist's death on their artworks' hammer prices.

It is important to note that these descriptive statistics provide valuable insights into the data, but they should not be considered as conclusive evidence. Artworks are heterogeneous commodities, and their prices are subject to global market trends and the preferences of Ultra High Net Worth Individuals (UHNWIs). Factors such as an artist's reputation, rarity, historical significance, and market demand also play critical roles in determining artwork prices. Therefore, further analysis and consideration of other factors are necessary to draw more comprehensive conclusions about the art market and its dynamics.

Table 7B.3: Descriptive Statistics: Modern Artists

Artist Name	Birth Year	Death Year	Age	Observations	Average of Winning Bid (INR)	Min of Winning Bid (INR)	Max of Winning Bid (INR)	Sum of Winning Bid (%)
S H Raza	1922	2016	94	197	5154726.868	16875	138720000	19.87%
M F Husain	1915	2011	96	278	2323036.147	7600	26192500	12.64%
V S Gaitonde	1924	2001	77	48	13405922.5	20625	399800000	12.59%
F N Souza	1924	2002	78	591	980823.1068	1980	45540000	11.32%
Tyeb Mehta	1925	2009	84	22	12946161.68	23636	96301000	5.57%
Akbar Padamsee	1928	2020	92	110	2539024.817	2040	42000000	5.42%
Ram Kumar	1924	2018	94	205	1311675.332	3000	16644000	5.26%
Jehangir Sabavala	1922	2011	89	42	3529138.333	8400	42000000	2.90%
Krishen Khanna	1925		96	165	745803.3374	1500	6606072	2.38%
Amrita Sher-Gil	1913	1941	28	21	4496499.381	4125	47520000	1.85%
Bhupen Khakhar	1934	2003	69	51	1851591.216	2600	62100000	1.85%
N S Bendre	1910	1992	82	36	2644441.029	12381	19800000	1.81%
Arpita Singh	1937		84	56	1442525.679	7875	11568000	1.58%
Jagdish Swaminathan	1928	1994	66	42	1680741.143	4500	7176720	1.38%
K G Subramanyan	1924	2016	92	98	662537.7245	4400	5328288	1.27%
B Prabha	1933	2001	68	56	1049759.291	7600	3000000	1.13%
Prabhakar Barwe	1936	1995	59	27	1820042.481	2100	27648000	0.96%
Jogen Chowdhury	1939		82	80	605522.125	6000	5850924	0.95%
Jamini Roy	1887	1972	85	78	600101.9103	3148	3276000	0.92%
Sakti Burman	1935		86	55	815218.3273	1900	5880000	0.88%
Ganesh Pyne	1937	2013	76	54	686088.6981	7000	3924000	0.71%
K K Hebbar	1911	1996	85	40	762011.45	2000	4078800	0.60%
Himmat Shah	1933		88	53	528921.2264	12480	3360000	0.55%
Manu Parekh	1939		82	39	698941.6667	10870	3630000	0.53%
K H Ara	1914	1985	71	53	493728.4717	7000	5040000	0.51%
Satish Gujral	1925	2020	95	26	964107.9231	13770	3942000	0.49%
Bikash Bhattacharjee	1940	2006	66	15	1624181.133	4000	10389744	0.48%
Anjolie Ela Menon	1940		81	19	1070417.526	25574	4200000	0.40%
Badri Narayan	1929	2013	84	61	306148.5333	1900	1327500	0.36%

Artist Name	Birth Year	Death Year	Age	Observations	Average of Winning Bid (INR)	Min of Winning Bid (INR)	Max of Winning Bid (INR)	Sum of Winning Bid (%)
Ghulam Rasool Santosh	1929	1997	68	25	705594.2	3600	2803200	0.35%
K Laxma Goud	1940		81	68	254949.25	3000	1800000	0.34%
Zarina Hashmi	1937	2020	83	26	539114.3077	30000	1796400	0.27%
Paritosh Sen	1918	2008	90	17	761490	8400	4156776	0.25%
K M Adimoolam	1938	2008	70	44	270814.0455	5902	864000	0.23%
Lalu Prasad Shaw	1937		84	33	315086.7576	6295	1073844	0.20%
Gaganendranath Tagore	1867	1938	71	18	524750.6111	8262	1782000	0.18%
Sadanand Bakre	1920	2007	87	16	541525.25	7636	2175600	0.17%
Nandalal Bose	1882	1966	84	19	368345.7895	4125	960001	0.14%
B. Vithal	1935	1992	57	12	463003	136560	1003200	0.11%
A A Raiba	1922	2016	94	15	337278.5333	9296	1070400	0.10%
A Ramachandran	1935		86	16	326944.5	5246	2832000	0.10%
Nasreen Mohamedi	1937	1990	53	13	353916.6154	12923	1153680	0.09%
Somnath Hore	1921	2006	85	18	252403.3889	8400	1132992	0.09%
Hari Ambadas Gade	1917	2001	84	15	212442.8667	3400	654900	0.06%
Paramjit Singh	1935		86	13	252138.9231	1700	732600	0.06%
Gulam Mohammed Sheikh	1937		84	17	137571.7647	9016	825600	0.05%
Ganesh Haloi	1936		85	11	188520.3636	110880	360000	0.04%
Grand Total				3014	1699951.278	1500	399800000	100.00%

Table 7B.4: Descriptive Statistics: Contemporary Artists

Artist Name	Birth Year	Death Year	Observations	Average of Winning Bid (INR)	Min of Winning Bid (INR)	Max of Winning Bid (INR)	Sum of Winning Bid (%)
Manjit Bawa	1941	2008	49	3955802.857	8400	39420000	25.58%
Subodh Gupta	1964		20	6468721.3	39063	17796204	17.07%
Thota Vaikuntam	1942		90	1234957.011	8400	8712000	14.50%
Atul Dodiya	1959		29	1213526.862	4638	7869000	4.64%
Anju Dodiya	1964		25	1187029.28	4638	4002000	3.92%
Bharti Kher	1969		16	1824656.2	7500	6350875	3.61%
Jitish Kallat	1974		35	768042.2	29508	6726000	3.55%
Surendran Nair	1956		27	843267.8846	4590	5214000	2.89%
Jagannath Panda	1970		35	597987.0588	2361	4800000	2.68%
Nataraj Sharma	1958		20	916208.2	11803	3402432	2.42%
Dhananjay Singh	1977		31	504949.4839	2557	3198096	2.07%
A Balasubramaniam	1971		22	697982.5	6885	4791611	2.03%
T V Santhosh	1968		25	610626.08	7869	2268000	2.01%
G R Iranna	1970		32	394405.3438	4348	1321848	1.67%
N S Harsha	1969		13	786622.1538	2754	3933138	1.35%
Shibu Natesan	1966		28	363954.6071	5072	2496000	1.34%
Baiju Parthan	1956		24	255970.75	3623	1288560	0.81%
Arunkumar H G	1968		12	475636.3333	29508	1132800	0.75%
Sudarshan Shetty	1961		12	451729.0833	1180	1472400	0.72%
Bose Krishnamachari	1963		16	331721.8125	17705	779100	0.70%
Chittrovanu Mazumdar	1956		10	504855.8	5507	2551275	0.67%
Hema Upadhyay	1972	2015	12	422239.0833	9443	1381800	0.67%
Mithu Sen	1971		21	236423.5238	1159	1800000	0.66%
Anandajit Ray	1965		14	270845.5	2951	2604096	0.50%
Manisha Parekh	1964		17	207071.1176	3125	920000	0.46%
Raghu Rai	1942		14	191396.0714	70800	402000	0.35%
Sudhanshu Sutar	1969		21	117897.7143	10147	318240	0.33%
Phaneendra Nath Chaturvedi	1981		20	114078.75	16721	724992	0.30%
Sunil Padwal	1968		11	177795.8182	9301	313920	0.26%
Manish Pushkale	1973		14	129771.7143	6885	411840	0.24%
Farhad Hussain	1975		9	193412.2222	43080	483600	0.23%
Gigi Scaria	1973		13	134797.8462	3934	516000	0.23%
Shilpa Gupta	1976		11	157863.5455	2899	1200600	0.23%
Amit Ambalal	1943		11	96607.72727	18000	540000	0.14%
Prabuddha Dasgupta	1956		16	63863.9375	12480	110160	0.13%
Ram Bali Chauhan	1976		13	73444.76923	31440	172040	0.13%
Arunanshu Chowdhury	1969		11	86015.81818	3934	162000	0.12%
Prabir C. Purkayastha	1952		11	31407.27273	6480	57840	0.05%
Grand Total			810	27093585.23	460688	141644467	100%

Table 7B.4 provides a comprehensive list of additional variables used to explain the auction prices of paintings in the dataset. These variables capture various characteristics of the paintings, the artists, and the auction context. From a descriptive statistics point of view, each of these variables can provide useful insights about the factors that influence the artwork prices:

Signature (signed or unsigned): The “signed” variable indicates if the painting is signed by the artist or not. This variable helps understand whether signed artworks command higher prices due to their authentication and the artist’s direct involvement.

- The “signed” category accounts for 9.26% of the observations, while the “unsigned” category represents 90.74%.
- Paintings that are signed by the artist have a higher average winning bid (INR 1,725,552.40) compared to unsigned paintings (INR 1,520,266.66).

Medium: The “medium” variable represents the artistic materials used to create the paintings. It includes various mediums like acrylic, charcoal, gouache, graphite, mixed media, oil, pen and ink, print, watercolour, and others. Descriptive statistics of this variable can reveal which mediums are more popular or preferred in the art market and if they correlate with price.

- “Oil” paintings represent the most significant portion of the observations (25.60%), followed by “canvas” (33.73%) and “paper” (51.60%).
- On average, “acrylic” paintings have the highest winning bids (INR 2,497,182.54), while “graphite” paintings have the lowest (INR 354,030.84).

Base of the Paintings: The “base” variable represents the surface on which the paintings are created. It includes categories like board, canvas, metal, and paper. Analyzing this variable can provide insights into whether the base material affects the artwork’s value.

- “Canvas” is the most common base for paintings (33.73%), followed by “paper” (51.60%) and “board” (8.37%).
- Paintings with “canvas” as the base have the highest average winning bid (INR 3,360,338.84), while those with “metal” as the base have the lowest (INR 1,195,321.06).

Category: The “category” variable differentiates between contemporary and modern art. Descriptive statistics for this variable can show the distribution of artworks in each category and any differences in average auction prices between contemporary and modern art.

- The “contemporary” category accounts for 21.18% of the total observations, while the “Modern” category represents 78.82%.
- On average, “Modern” paintings have higher winning bids (INR 1,699,951.28) compared to “contemporary” paintings (INR 940,290.45).
- The highest winning bid for a “Modern” painting was INR 399,800,000, while for a “contemporary” painting, it was INR 39,420,000.

Gender: The “gender” variable identifies the gender of the artists, whether they are male or female. Descriptive statistics related to gender can shed light on potential gender-based price disparities in the art market.

- The “Female” category comprises 8.68% of the observations, and the “Male” category accounts for 91.32%.
- Paintings created by female artists have an average winning bid of INR 1,125,737.21, while those by male artists have an average winning bid of INR 1,578,527.96.

Life Status and Age of Artist: These variables provide information about the life status (deceased or alive) and age of the artists. Descriptive statistics for these variables can offer insights into whether artworks by deceased artists or artists of a certain age group command different prices compared to living artists.

- The “Alive” category represents 35.93% of the observations, and the “Dead” category makes up 64.07%.
- Paintings by deceased artists have a significantly higher average winning bid (INR 2,003,700.22) compared to those by living artists (INR 709,710.75).
- The majority of artists fall in the “60 - 80 Yrs” category (34.26%), followed by “80 - 100 Yrs” (50.84%).

- On average, paintings by artists aged “20 - 40 Yrs” have the highest winning bids (INR 4,496,499.38), while those by artists aged “40 - 60 Yrs” have the lowest (INR 760,992.95).

Artist Dummies: The “artist dummies” are a set of binary variables that represent individual artists. Descriptive statistics for these variables can reveal which artists are more frequently represented in the dataset and if any specific artists have a significant impact on auction prices.

Year of Auction (Y2010 to Y2021): The “Year of Auction” variables represent the years in which the artworks were tendered in auctions. Descriptive statistics for these variables can show how auction prices have evolved over time and whether there are any noticeable trends or fluctuations in prices across different years.

- The year 2021 had the highest average winning bid (INR 6,893,266.86) among all years, while 2013 had the lowest (INR 874,272.78).
- The highest winning bid in any year was recorded in 2021 (INR 399,800,000).

These descriptive statistics provide valuable insights into the distribution and trends of various variables in the dataset and their relationships with the auction prices of paintings. They offer a comprehensive view of how different factors, such as category, gender, life status, medium, base of paintings, age of artist, and year of auction, influence the winning bids in the art market. Researchers can use this information to further analyze the data, identify patterns, and make more informed interpretations about the determinants of artwork prices in the auction market.

By analyzing the descriptive statistics of these variables, researchers can gain a better understanding of the relationships between various painting characteristics, artist attributes, auction dynamics, and the final auction prices. These insights can contribute to a more comprehensive and nuanced understanding of the art market’s behavior and pricing mechanisms.

Table 7B.5: Descriptive Statistics: Other Price Determinants

Variable	Observations	% of Total Observations	Average of Winning Bid (INR)	Min of Winning Bid (INR)	Max of Winning Bid (INR)	Sum of Winning Bid (INR)	Sum of Winning Bid (%)
Contemporary	810	21.18%	940290.4504	1159	39420000	757874103	12.92%
Modern	3014	78.82%	1699951.278	1500	399800000	5110053541	87.08%
Female	332	8.68%	1125737.206	1159	47520000	371493278	6.33%
Male	3492	91.32%	1578527.963	1180	399800000	5496434366	93.67%
Alive	1374	35.93%	709710.7537	1159	17796204	970884311	16.55%
Dead	2450	64.07%	2003700.218	1900	399800000	4897043333	83.45%
Signed	354	9.26%	1725552.398	1159	138720000	610845549	10.41%
Unsigned	3470	90.74%	1520266.656	1180	399800000	5257082095	89.59%
Acrylic	566	14.80%	2497182.539	2361	138720000	1408410952	24.00%
Charcoal	94	2.46%	386192.266	1700	3786444	36302073	0.62%
Gouache	161	4.21%	598357.2857	4125	17431920	96335523	1.64%
Graphite	31	0.81%	354030.8387	3091	1534464	10974956	0.19%
Mixed media	239	6.25%	515005.3013	1159	3528000	123086267	2.10%
Oil	979	25.60%	3511515.903	3934	399800000	3420216490	58.29%
Other	1066	27.88%	479076.682	1180	27648000	509258513	8.68%
Pen and ink	127	3.32%	219371.9449	2909	2880000	27860237	0.47%
Print	67	1.75%	210333.5075	3211	2426213	14092345	0.24%
Watercolour	494	12.92%	449980.2602	1900	7680120	221390288	3.77%
Board	320	8.37%	1852066.188	5072	47520000	590809114	10.07%
Canvas	1290	33.73%	3360338.842	2361	399800000	4311314734	73.47%
Metal	101	2.64%	1195321.059	11429	17796204	120727427	2.06%
Other	140	3.66%	702783.05	1900	8160480	98389627	1.68%
Paper	1973	51.60%	379221.3012	1159	17431920	746686742	12.72%
20 - 40 Yrs	21	0.55%	4496499.381	4125	47520000	94426487	1.61%
40 - 60 Yrs	549	14.36%	760992.947	1159	27648000	416263142	7.09%
60 - 80 Yrs	1310	34.26%	1510905.92	1180	399800000	1971732225	33.60%
80 - 100 Yrs	1944	50.84%	1746006.08	1500	138720000	3385505790	57.70%
2011	422	11.04%	1549290.583	25013	71990000	653800626	11.14%
2012	571	14.93%	1239629.068	6480	96301000	707828198	12.06%
2013	621	16.24%	874272.781	2438	34065000	542923397	9.25%
2014	441	11.53%	640459.3447	1180	43247000	282442571	4.81%
2015	334	8.73%	686587.4641	2909	77553071	229320213	3.91%
2016	270	7.06%	1354439.385	4000	47520000	365698634	6.23%
2017	250	6.54%	1442248.568	3091	42720000	360562142	6.14%
2018	230	6.01%	2834857.217	1980	62100000	652017160	11.11%
2019	295	7.71%	2106721.207	1159	138720000	621482756	10.59%
2020	281	7.35%	2604036.651	8219	48180000	700485859	11.94%
2021	109	2.85%	6893266.862	46667	399800000	751366088	12.80%

7B.2.2 Hedonic Regression

The use of the hedonic pricing model serves the primary objective of gaining an understanding of the price components, which were subsequently researched throughout the development of IAI. This model is built on the methodology of multiple regression, which acts as its foundation. In order to calculate the returns on art investments, it was necessary to determine a link between the natural logs of the values stated in INR and the year dummies.

When doing a hedonic regression analysis, it is usual practice to make use of dummy variables in order to add categorical factors into the model. The purpose of hedonic regression is to arrive at an estimate of the connection between the cost of a good or service and the many characteristics that it possesses. These characteristics may be characterized by continuous variables (such as size, age, or distance) or categorical variables (such as location, color, or kind), depending on the context.

Categorical variables are variables that can only take on a specific and finite range of values, such as "yes" or "no," "red," "green," or "blue," or categories like "urban," "suburban," or "rural." In regression analysis, these categories are represented by dummy variables, also known as indicator variables or binary variables. Dummy variables also go by the name indicator variables.

The process of using dummy variables in hedonic regression involves the following steps:

Identifying the categorical variables: Determine which variables in your dataset are categorical. These are the variables that will require dummy variables.

Creating Dummy Variables: For each category in a categorical variable, you create a separate binary variable (dummy variable) that takes the value of 1 if the observation belongs to that category and 0 otherwise. For a categorical variable with “k” categories, you will need to create “k-1” dummy variables. This is done to avoid multicollinearity, which occurs when the dummy variables are perfectly correlated.

Incorporating Dummy Variables in the Regression Model: Once you have created the dummy variables, you include them alongside the continuous variables in your

hedonic regression model. The coefficients of the dummy variables represent the average change in the dependent variable (e.g., price) associated with belonging to a particular category compared to the reference category (the one omitted as the baseline).

Example: Let's say you are conducting a hedonic regression to estimate the price of houses based on their location. The location variable has three categories: urban, suburban, and rural. You create two dummy variables: "Suburban" and "Rural."

The regression model may look like this:

$$\text{Price} = \beta_0 + \beta_1 * \text{Size} + \beta_2 * \text{Age} + \beta_3 * \text{Distance} + \beta_4 * \text{Suburban} + \beta_5 * \text{Rural} + \varepsilon$$

In this model:

β_0 is the intercept.

β_1 , β_2 and β_3 are the coefficients for the continuous variables (Size, Age, and Distance, respectively).

β_4 and β_5 are the coefficients for the dummy variables "Suburban" and "Rural," respectively.

If the "Urban" category is used as the reference category (omitted), the coefficient for "Suburban" (β_4) would represent the average difference in price between suburban houses and urban houses, and the coefficient for "Rural" (β_5) would represent the average difference in price between rural houses and urban houses.

By incorporating dummy variables into hedonic regression, we may effectively consider the impacts of categorical factors and gain a more comprehensive insight into how different factors influence the price of the examined product or service.

7B.2.2.1 Variables

The dataset used for hedonic regression consists of 127 variables ($M = 127$). These variables can be categorized as follows:

- a. **Artist Dummies (85 variables):** These represent different artists in the Indian art market. Each artist has a separate dummy variable to account for their impact on the artwork prices.
- b. **Artwork-related Dummies (25 variables):** These represent different attributes or characteristics of the artworks, such as the type of artwork, style, medium used, etc.
- c. **Artist-related Dummies (4 variables):** These represent specific attributes related to the artists, such as whether the artist is deceased or alive, and the age of the artist.
- d. **Continuous Variables (3 variables):** These are continuous numeric variables used in the regression model. They include:

Surface Area of Paintings: The size of the artwork in terms of its surface area.

Artist's Age: The age of the artist at the time of the artwork's creation.

Sales: The sales figures for the artworks.

Collinearity and Time Period Dummies: To avoid collinearity issues with time period dummies (presumably representing different years), the dataset includes a sales variable corresponding to 2010 as a reference point ($Y=22$). This means that the year 2010 is treated as the baseline year, and the sales corresponding to this year are excluded in Model 2. By doing this, the regression analysis can better isolate the effects of other variables on the artwork prices without being confounded by changes over time.

Model 1 and Model 2: Two models (Model 1 and Model 2) were constructed for the hedonic regression analysis.

Model 1 likely includes all the variables (127) without any exclusions and serves as the initial regression model for understanding the relationships between the various artist-related, artwork-related, and continuous variables on artwork prices.

Model 2 excludes the sales corresponding to 2010 ($Y=22$) to address collinearity concerns with time period dummies. This exclusion allows for a more focused analysis of the impact of the other variables on artwork prices.

7B.2.2.2 Price Indices and Financial Assets

After performing the hedonic regression and estimating the coefficients for different variables in the models, the study seems to expand upon and discuss price indices. These indices likely represent the changes in artwork prices over time and could be used for comparison with other financial assets or indicators in the market.

The hedonic regression analysis for the overall Indian art market involves multiple variables, including artist-related dummies, artwork-related dummies, and continuous variables such as the surface area of paintings, artist's age, and sales figures. By excluding sales data for the reference year (2010) in Model 2, the analysis aims to mitigate collinearity issues related to time period dummies. The price indices derived from the regression results are subsequently analyzed in relation to other financial assets to gain insights into the art market's performance.

The results of a multiple hedonic regression analysis performed to explore the relationship between the dependent variable (LOGPRICE) and several independent variables related to paintings. The goal is to understand the factors that influence the auction prices of the artworks.

Model Selection: The regression analysis was carried out using the stepwise method to select the most relevant predictors for the model. The stepwise method automatically selects variables based on certain criteria, such as adjusted R-squared and root mean squared error (RMSE). The model (Model 1) was chosen based on having the highest adjusted R-squared (Adjusted R²) and the lowest RMSE among other models considered. This selection aims to strike a balance between including enough variables to capture important predictors and avoiding overfitting the model.

Model Generalization: The model's Adjusted R-squared value is close to the R-squared value, indicating that the model can be moderately generalized to the population. The multiple correlation (R) between the predictors and the log price is 0.559, and the R-squared (R²) value is 0.359, which means that approximately 35.9% of the variance in the log price can be explained by the selected set of predictors.

Adjusted R-squared: The Adjusted R-squared value (0.359) incorporates the number of predictors in the model, offering a modified assessment of the model's fit to the data. The coefficient of determination quantifies the amount of variability in the dependent variable that can be accounted for by the independent variables, taking into account the degrees of freedom. The model's adjusted R-squared suggests that the chosen predictors explain the variation in log prices to a moderate extent.

Durbin-Watson Statistic: The Durbin-Watson statistic is used to check for the presence of autocorrelation (dependence between error terms) in the regression model. A value of 2 is considered the ideal benchmark, indicating no autocorrelation. In this case, the obtained value is 1.746, suggesting that the assumption of independent errors in the model is met. However, it's essential to be cautious as values below 1 or beyond 3 would raise concerns about potential issues of autocorrelation.

The results of the multiple hedonic regression (Model 1) provide insights into how well the chosen set of predictors explains the variation in the log prices of the artworks. The model shows a moderate level of generalization, with approximately 35.9% of the variance in log prices being explained. Additionally, the Durbin-Watson statistic supports the assumption of independent errors in the model. Researchers may further interpret and refine the model based on these findings to gain a better understanding of the determinants of artwork prices in the auction market.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.599 ^a	.359	.339	1.62919

a. **Predictors:** (Constant), Y2020, J_SAB, RB_CHA, NS_HAR, S_BAK, A_RAM, B_KHE, N_BOS, Anju_DOD, G_TAG, F_HUS, C_MAZ, P_SEN, PC_PUR, G_HAL, A_AMB, A_CHO, S_PAD, B_VIT, S_SHE, H_UPA, AH_G, P_SIN, N_MOH, G_SCA, T_MEH, R_RAI, A_RAY, M_PUS, AA_RAI, B_BHA, HA_GAD, B_KRI, P_DAS, S_GUJ, GM_SHE, S_HOR, TV_SAN, N_SHA, PN_CHA, S_NAI, S_SUT, M_SEN, A_BAL, LP_SHA, Z_HAS, B_PAR, NS_BEN,

AE_MEN, GR_SAN, P_BAR, Subodh_GUP, GR_IRA, J_PAN, S_NAT, A_DOD, D_SIN, J_SWA, KM_ADI, J_KAL, KK_HEB, Y20_40, VS_GAI, KH_ARA, M_BAW, S_BUR, G_PYN, H_SHA, B_KHA, B_PRA, Manu_PAR, B_NAR, A_SIN, KG_SUB, KL_GOU, J_CHO, J_ROY, Y2018, T_VAI, pen_and_ink, Y2016, graphite, A_PAD, Y2015, K_KHA, other_Surface, Y2017, charcoal, Y2019, R_KUM, Unsigned, Y2011, gouache, SH_RAZ, board, Y2014, MF_HUS, mixed_media, Titled, watercolour, metal, oil, Y2012, Year_not_given, print, acrylic, canvas, Y40_60, Female

Table 7B.6: Coefficients Values

Model		Unstandardized Coefficients				Sig.	Collinearity Statistics	
		B	Std. Error	Beta	t		Tolerance	VIF
1	(Constant)	10.845	0.101		107.72	0		
	Anju_DOD	3.558	0.89	0.145	3.999	0	0.135	7.408
	AH_G	0.929	0.689	0.026	1.347	0.178	0.467	2.142
	A_DOD	0.656	0.32	0.029	2.05	0.04	0.901	1.11
	B_PAR	-0.72	0.352	-0.029	-2.047	0.041	0.9	1.112
	D_SIN	-0.528	0.596	-0.024	-0.887	0.375	0.243	4.113
	F_HUS	-0.991	0.749	-0.024	-1.323	0.186	0.527	1.899
	GR_IRA	-0.549	0.582	-0.025	-0.943	0.346	0.247	4.046
	G_SCA	-0.912	0.675	-0.027	-1.352	0.176	0.45	2.221
	J_PAN	-0.546	0.576	-0.026	-0.948	0.343	0.231	4.33
	M_SEN	1.967	0.906	0.074	2.17	0.03	0.155	6.459
	NS_HAR	-0.141	0.675	-0.004	-0.209	0.834	0.449	2.226
	PN_CHA	-0.999	0.619	-0.036	-1.616	0.106	0.349	2.867
	RB_CHA	-2.419	0.687	-0.071	-3.523	0	0.435	2.301
	S_NAT	-0.337	0.587	-0.015	-0.574	0.566	0.278	3.603
	Subodh_GUP	1.804	0.623	0.082	2.898	0.004	0.223	4.49
	S_SUT	-1.716	0.627	-0.064	-2.735	0.006	0.323	3.096
	A_BAL	0.592	0.607	0.023	0.976	0.329	0.329	3.038
	A_PAD	0.73	0.178	0.061	4.1	0	0.798	1.253
	A_RAY	-0.692	0.664	-0.021	-1.042	0.298	0.431	2.319
	AE_MEN	2.779	0.77	0.099	3.61	0	0.237	4.221
	A_SIN	3.446	0.697	0.21	4.941	0	0.099	10.108
	B_PRA	2.625	0.708	0.154	3.706	0	0.103	9.69

Model	Unstandardized Coefficients				Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
B_NAR	0.673	0.242	0.042	2.787	0.005	0.783	1.277
B_KHE	3.339	0.908	0.109	3.679	0	0.202	4.946
B_KHA	1.143	0.245	0.066	4.665	0	0.878	1.138
B_KRI	-0.275	0.659	-0.009	-0.417	0.677	0.409	2.443
H_UPA	2.671	0.944	0.076	2.828	0.005	0.249	4.02
H_SHA	-0.25	0.264	-0.015	-0.947	0.344	0.742	1.347
J_SAB	1.045	0.272	0.054	3.835	0	0.904	1.106
J_CHO	1.116	0.2	0.08	5.576	0	0.868	1.152
KG_SUB	0	0.227	0	0.002	0.999	0.808	1.238
KH_ARA	0.148	0.256	0.009	0.579	0.563	0.805	1.242
K_KHA	0.3	0.163	0.031	1.846	0.065	0.643	1.554
MF_HUS	1.374	0.131	0.177	10.464	0	0.619	1.615
M_BAW	1.258	0.249	0.071	5.057	0	0.905	1.105
Manu_PAR	2.303	0.717	0.139	3.214	0.001	0.095	10.485
NS_BEN	0.681	0.3	0.031	2.269	0.023	0.928	1.078
P_BAR	0.982	0.59	0.041	1.663	0.096	0.295	3.39
R_KUM	0.621	0.143	0.07	4.356	0	0.693	1.443
SH_RAZ	1.04	0.158	0.115	6.56	0	0.583	1.715
S_NAI	0	0.328	0	-0.001	1	0.92	1.088
T_VAI	0.571	0.207	0.043	2.767	0.006	0.724	1.381
T_MEH	1.985	0.356	0.076	5.574	0	0.957	1.045
Z_HAS	3.935	0.72	0.164	5.466	0	0.198	5.04
KK_HEB	0.095	0.27	0.005	0.353	0.724	0.918	1.089
KL_GOU	0.079	0.213	0.005	0.37	0.711	0.875	1.143
KM_ADI	-0.248	0.27	-0.013	-0.919	0.358	0.901	1.11
N_MOH	3.063	0.945	0.09	3.24	0.001	0.229	4.361
P_SIN	-0.017	0.468	-0.001	-0.037	0.971	0.934	1.071
VS_GAI	2.054	0.249	0.115	8.252	0	0.924	1.083
A_RAM	-0.18	0.415	-0.006	-0.433	0.665	0.966	1.035
P_DAS	-0.131	0.487	-0.004	-0.269	0.788	0.704	1.421
S_HOR	0.681	0.392	0.024	1.737	0.083	0.963	1.038
S_SHE	-0.47	0.479	-0.013	-0.98	0.327	0.967	1.034
C_MAZ	-0.443	0.53	-0.011	-0.836	0.403	0.946	1.057

Model	Unstandardized Coefficients				Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
J_SWA	0.947	0.268	0.049	3.533	0	0.912	1.097
J_KAL	0.825	0.577	0.039	1.429	0.153	0.237	4.227
TV_SAN	-0.192	0.595	-0.008	-0.323	0.747	0.302	3.316
G_PYN	1.132	0.239	0.067	4.732	0	0.888	1.126
HA_GAD	0.115	0.434	0.004	0.265	0.791	0.942	1.062
P_SEN	0.38	0.417	0.012	0.91	0.363	0.958	1.044
S_BUR	0.535	0.242	0.032	2.21	0.027	0.85	1.176
A_CHO	-1.713	0.705	-0.046	-2.431	0.015	0.487	2.053
B_VIT	0.145	0.693	0.004	0.209	0.835	0.462	2.166
S_GUJ	0.894	0.37	0.036	2.416	0.016	0.814	1.229
B_BHA	0.971	0.429	0.031	2.264	0.024	0.965	1.036
LP_SHA	1.06	0.296	0.05	3.579	0	0.926	1.08
N_SHA	0.722	0.391	0.026	1.846	0.065	0.919	1.088
A_AMB	-0.81	0.501	-0.022	-1.615	0.106	0.962	1.039
G_HAL	0.737	0.502	0.02	1.47	0.142	0.961	1.04
GM_SHE	-0.212	0.405	-0.007	-0.524	0.6	0.955	1.047
M_PUS	-1.589	0.666	-0.049	-2.384	0.017	0.428	2.334
PC_PUR	-0.862	0.577	-0.023	-1.494	0.135	0.726	1.377
R_RAI	0.636	0.451	0.019	1.411	0.158	0.937	1.067
S_PAD	-1.228	0.719	-0.033	-1.708	0.088	0.468	2.136
GR_SAN	0.079	0.339	0.003	0.234	0.815	0.93	1.075
G_TAG	1.43	0.398	0.05	3.593	0	0.935	1.07
J_ROY	0.724	0.226	0.051	3.203	0.001	0.706	1.416
N_BOS	0.977	0.385	0.035	2.536	0.011	0.946	1.057
S_BAK	-1.277	0.432	-0.04	-2.955	0.003	0.951	1.052
AA_RAI	-1	0.436	-0.032	-2.297	0.022	0.937	1.068
Female	-2.475	0.656	-0.349	-3.773	0	0.021	48.204
Y20_40	3.272	0.758	0.119	4.318	0	0.232	4.303
Y40_60	0.165	0.487	0.029	0.338	0.735	0.024	41.605
Titled	0.169	0.073	0.038	2.324	0.02	0.655	1.528
watercolour	0.427	0.111	0.071	3.855	0	0.519	1.928
acrylic	1.217	0.13	0.215	9.39	0	0.341	2.936
mixed_media	0.576	0.142	0.07	4.051	0	0.605	1.654

Model	Unstandardized Coefficients				Sig.	Collinearity Statistics	
	B	Std. Error	Beta	t		Tolerance	VIF
gouache	0.611	0.156	0.06	3.918	0	0.758	1.32
oil	1.221	0.122	0.266	9.994	0	0.252	3.97
print	-0.258	0.29	-0.017	-0.891	0.373	0.481	2.079
charcoal	0.394	0.19	0.031	2.071	0.038	0.816	1.226
pen_and_ink	0.089	0.16	0.008	0.56	0.575	0.854	1.171
graphite	0.128	0.316	0.006	0.405	0.685	0.922	1.085
board	0.777	0.127	0.107	6.119	0	0.587	1.705
canvas	0.779	0.109	0.184	7.172	0	0.271	3.685
metal	1.844	0.214	0.15	8.613	0	0.589	1.696
other_Surface	0.537	0.164	0.049	3.273	0.001	0.785	1.275
Unsigned	-0.099	0.111	-0.014	-0.894	0.371	0.702	1.425
Year_not_given	-0.162	0.085	-0.034	-1.911	0.056	0.551	1.815
Y2011	0.829	0.107	0.131	7.766	0	0.622	1.607
Y2012	0.422	0.098	0.076	4.318	0	0.576	1.737
Y2014	-0.976	0.106	-0.158	-9.226	0	0.61	1.64
Y2015	-1.142	0.115	-0.163	-9.908	0	0.657	1.522
Y2016	-0.192	0.124	-0.025	-1.542	0.123	0.685	1.46
Y2017	-0.32	0.128	-0.04	-2.495	0.013	0.694	1.441
Y2018	0.141	0.13	0.017	1.081	0.28	0.723	1.383
Y2019	-0.101	0.122	-0.014	-0.829	0.407	0.661	1.513
Y2020	0.695	0.123	0.092	5.638	0	0.672	1.487
a. Dependent Variable: WinningBid_Ln							

Table 7B.6 put forwards the coefficients table for the variables in regression model. The beta values and its significance captures the essence of the dynamics underlying the influences associated with these variables are reflected as model parameters all the stages in the hierarchy. For the sake of convenience only the final model is revealed.

The interpretation of the results obtained from the regression analysis, particularly focusing on beta-values, t-tests, collinearity assessment, and the interplay of standardized beta values.

Beta-Values and Interpretation: The beta-values (also known as regression coefficients) define the link between the predictors (independent variables) and the outcome (in this example, the auction price of the artworks). A positive beta-value shows a positive connection, which means that when the predictor variable grows, so does the auction price. A negative beta-value, on the other hand, denotes a negative association, meaning that as the predictor variable grows, the auction price tends to fall.

T-Tests and Significance: The t-tests are used to determine if the beta-values are statistically significant. A significant t-test indicates that the predictor has a meaningful and reliable contribution to the model. In this context, if a predictor's t-test identifies a p-value below 0.05 (common significance level), then the predictor is considered significant in explaining the variation in the auction price.

Collinearity Assessment: Collinearity refers to the intercorrelation among predictor variables in a regression model. High collinearity can lead to unstable and unreliable coefficient estimates. To assess collinearity, Variance Inflation Factor (VIF) and tolerance statistics are used. A VIF value greater than 10 or a tolerance value less than 0.2 indicates potential collinearity issues.

Mean VIF and Collinearity: The passage mentions calculating the mean VIF to evaluate overall collinearity in the model. The mean VIF is obtained by summing up the VIF values for all predictors and then dividing by the total number of predictors (k). A mean VIF close to one (1) indicates low collinearity and suggests that the predictors are not highly correlated, ensuring the regression model's stability.

Interplay of Standardized Beta Values: Standardized beta values are derived by standardizing the beta coefficients using the standard deviation of the corresponding predictor. These standardized beta values allow for the comparison of the relative importance and impact of different predictors on the outcome variable. By examining the standardized beta values and their significance (as determined by the t-tests), researchers can interpret which predictors have a more substantial effect on the auction prices and identify the most influential variables. Based on the interpretation of

regression results using beta-values and t-tests. It also emphasizes the importance of assessing collinearity using VIF and tolerance statistics to ensure the stability of the model. Additionally, the interplay of standardized beta values aids in understanding the relative significance of predictors in explaining the variation in auction prices.

Table 7B.7: Excluded Variables

	Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
						Tolerance	VIF	Minimum Tolerance
1	S_GUP	. ^b	.	.	.	0	.	0
	FN_SOU	. ^b	.	.	.	0	.	0
	M_PAR	. ^b	.	.	.	0	.	0
	A_SHE	. ^b	.	.	.	0	.	0
	Male	. ^b	.	.	.	0	.	0
	contemporary	. ^b	.	.	.	0	.	0
	Modern	. ^b	.	.	.	0	.	0
	Y60_80	. ^b	.	.	.	0	.	0
	Y80_100	. ^b	.	.	.	0	.	0
	Alive	. ^b	.	.	.	0	.	0
	Dead	. ^b	.	.	.	0	.	0
	Untitled	. ^b	.	.	.	0	.	0
	other	. ^b	.	.	.	0	.	0
	paper	. ^b	.	.	.	0	.	0
	Signed	. ^b	.	.	.	0	.	0
	YearGiven	. ^b	.	.	.	0	.	0
	Y2013	. ^b	.	.	.	0	.	0
a. Dependent Variable: WinningBid_Ln								
b. Predictors in the Model: (Constant), Y2020, J_SAB, RB_CHA, NS_HAR, S_BAK, A_RAM, B_KHE, N_BOS, Anju_DOD, G_TAG, F_HUS, C_MAZ, P_SEN, PC_PUR, G_HAL, A_AMB, A_CHO, S_PAD, B_VIT, S_SHE, H_UPA, AH_G, P_SIN, N_MOH, G_SCA, T_MEH, R_RAI, A_RAY, M_PUS, AA_RAI, B_BHA, HA_GAD, B_KRI, P_DAS, S_GUJ, GM_SHE, S_HOR, TV_SAN, N_SHA, PN_CHA, S_NAI, S_SUT, M_SEN, A_BAL, LP_SHA, Z_HAS, B_PAR, NS_BEN, AE_MEN, GR_SAN, P_BAR, Subodh_GUP, GR_IRA, J_PAN, S_NAT, A_DOD, D_SIN, J_SWA, KM_ADI, J_KAL, KK_HEB, Y20_40, VS_GAI, KH_ARA, M_BAW, S_BUR, G_PYN, H_SHA, B_KHA, B_PRA, Manu_PAR, B_NAR, A_SIN, KG_SUB, KL_GOU, J_CHO, J_ROY, Y2018, T_VAI, pen_and_ink, Y2016, graphite, A_PAD, Y2015, K_KHA, other_Surface, Y2017, charcoal, Y2019, R_KUM, Unsigned, Y2011, gouache, SH_RAZ, board, Y2014, MF_HUS, mixed_media, Titled, watercolour, metal, oil, Y2012, Year_not_given, print, acrylic, canvas, Y40_60, Female								

Since the R^2 Value of this is only .359, so explainability of this Model is still only 35.9%. In this case, further few more predictors need to remove. To find more precise results repeat the same process three more times on third and fourth attempt model explainability is not increased much.

Table 7B.8: Details of Attempts

S.No.	Attempt	Number of Predictors	Excluded Predictor	Model Eplainability (R square Value)
1	1st	109	18	0.359
2	2nd	69	40	0.344
3	3rd	56	13	0.388
4	4th	54	2	0.338

The case wise diagnostics indicating cases with the standard residual with vale ranging from -3 to 3 were not considered as paintings may pertain to phenomenal absurdities in price valuation leading to outliers and influences cases. To evaluate the normality of residuals, the histogram is studied as shown in Figure 7B.1. The histogram is supposed look like a normal distribution (a bell-shaped curve). SPSS maps out a curve on the histogram to display the shape of the distribution and it is noted that the distribution is roughly normal with a slight over sufficiency of residuals around zero.

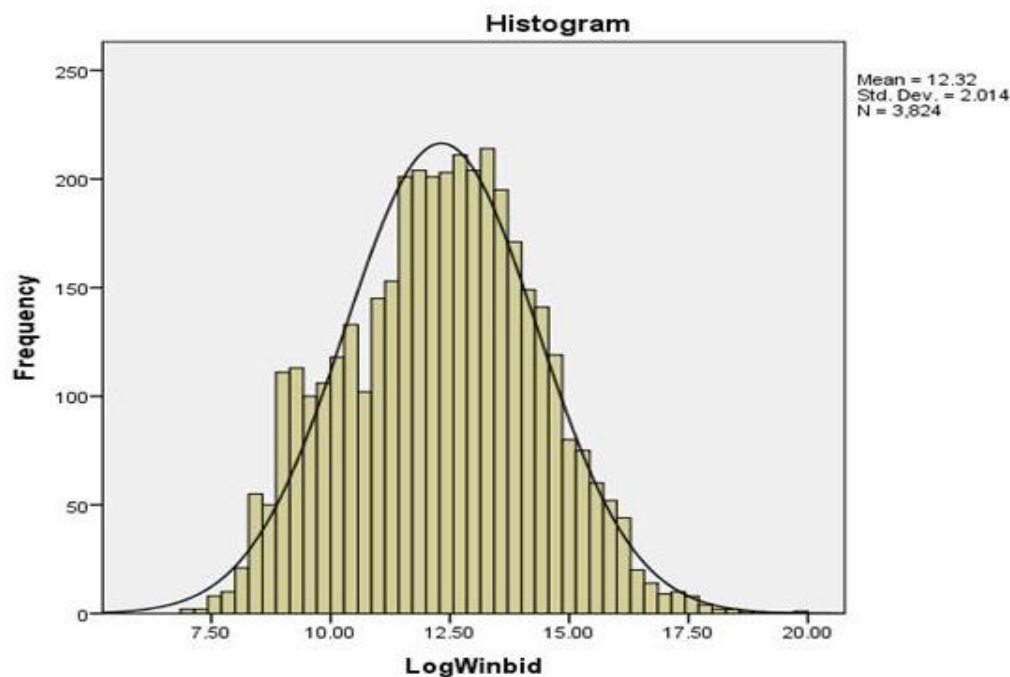


Figure 7B.1: Histogram

Statistics		
LogWinbid		
N	Valid	3824
	Missing	0
Skewness		.004
Std. Error of Skewness		.040
Kurtosis		-.425
Std. Error of Kurtosis		.079

Subsequently, an assessment of distribution normality is undertaken. To mitigate data dispersion within the winning bid range (DATA), a novel variable, LogWinbid, is derived by computing the logarithmic values of the winning bids. As delineated in Table [Insert Table Number], the Skewness and Kurtosis statistics for LogWinbid are recorded as 0.004 and 0.079, respectively. These values indicate a normal distribution pattern for LogWinbid. Furthermore, this normality assertion is corroborated by a histogram (depicted in Figure [Insert Figure Number]), illustrating a distribution curve that closely approximates a bell-shaped normal distribution.

7B.3 Findings and Conclusion

In this chapter, an examination of both tangible and intangible facets related to artwork and artist characteristics within the Indian art market was conducted to ascertain their influence on pricing dynamics. These identified factors were employed in the construction of the Indian Art Index (IAI), subsequently subjected to comparative analysis alongside other financial indices for the purpose of portfolio performance assessment. Initial findings indicate that artworks crafted using oil and acrylic mediums tend to command higher premiums. Additionally, among the attributes associated with artists, the vital factor of the artist's current living status emerged as a significant determinant in price determination.

The scrutiny extended to the artists' brand, with notable findings indicating that two of the top five highest-priced artworks were attributed to V S Gaitonde. These works exhibited substantial price premiums and, from a statistical perspective, exerted a

noteworthy influence on auction price prediction. Nevertheless, it is essential to exercise caution in drawing definitive conclusions, as the sales data were subjected to homogenization via hedonic regression to accommodate the influence of other variables.

It was observed that returns on artists' works can have significant fluctuations due to multicollinearity in the variables. Some artists were excluded from the analysis because their works became closely associated with specific themes and mediums as they advanced in their careers. The brand of the artists serves as a proxy for reputation and authenticity, as high-valued works in auctions are most frequently created by blue-chip modern artists.

Subsequently, the utilization of time dummies was employed to compute returns on investments in paintings. The index derived from these time dummies exhibited that art has displayed a moderate performance, even during periods of financial turbulence. Noteworthy events, such as financial downturns, the introduction of GST, demonetization, as well as political and technological developments, have had discernible effects on the art market, resulting in noticeable peaks and troughs in its performance.

Furthermore, an evaluation of the correlation was conducted between the returns on paintings obtained through hedonic modeling and the returns on stock and bullion indices. The analysis disclosed that paintings exhibit a positive influence on portfolio returns while maintaining a low level of volatility. However, it is imperative to acknowledge that the art market continues to grapple with transparency challenges, and the analyzed data represents only a segment within the expansive domain of the art market. As a result, more comprehensive investigations are imperative to provide deeper insights into this complex landscape. The chapter concludes with a discussion of Indian art's performance in a portfolio. The reported returns are not a comprehensive representation of the investment, as transaction fees and other trading and storage costs are not accounted for in the study. Moreover, besides financial returns, there are also inherent intrinsic rewards in owning artwork or a collection.

Overall, the chapter sheds light on the complexities and potential of the Indian art market as an investment avenue. It emphasizes the need for more research and

transparency in the art market to better understand its dynamics and potential benefits as part of a diversified investment portfolio.

After four attempt the explainability of model is reduced to 33.8% against third attempt whwre the model explainability is 38.8% and it has only 56 predictors hence there is a need to explore more determinants affecting the valuation of art wchich will be explained in next chapter.

7C.1 Determinants of Indian Modern Art (Qualitative Study) Introduction

Indian Modern Art has emerged as a captivating and diverse cultural expression, captivating art enthusiasts and collectors alike. As the demand for Indian Modern Art continues to grow both locally and internationally, understanding the intricate factors that determine its pricing has become a matter of great significance for stakeholders in the art industry. This qualitative research chapter aims to shed light on the key price determinants of Indian Modern Art by conducting in-depth interviews with fifteen individuals, comprising Art dealers, Art Consultants, Auction House Officials, Art Gallery Owners, Artists, and Art collectors. Through their valuable insights and experiences, this study seeks to unveil the nuances that contribute to the pricing dynamics of Indian Modern Art, providing a deeper comprehension of the art market and fostering a platform for informed decision-making.

The art world operates within a complex web of factors that influence the value of artistic creations, making it imperative to adopt a qualitative approach to capture the multifaceted nature of these determinants. By engaging with a diverse group of industry experts and stakeholders, this research endeavors to capture a comprehensive range of perspectives, which would not only validate existing notions but also unravel lesser-known dimensions impacting the pricing of Indian Modern Art.

This chapter's qualitative analysis will delve into the participants' narratives, exploring their insights on aspects such as the influence of artists' reputation and popularity on pricing, the role of art aesthetics and cultural value, the significance of provenance and historical context, and the impact of market demand and collector preferences. By combining these diverse viewpoints, this research aims to present a holistic and well-rounded understanding of the intricate interplay of factors that contribute to the valuation of Indian Modern Art.

The findings of this study hold potential benefits for various stakeholders within the art ecosystem, including artists seeking to understand their market positioning, dealers aiming to make informed investment decisions, collectors looking to discern value propositions, and scholars in the realm of art economics and cultural studies. Moreover,

this research may provide crucial insights into the evolution of art markets, the changing dynamics of artistic value, and the broader implications of art as an asset class.

This qualitative analysis is designed to uncover the factors influencing the pricing of Indian Modern Art by drawing upon the knowledge and perspectives of key industry stakeholders. By conducting a comprehensive exploration of diverse viewpoints, the aim is to provide valuable insights that enhance the discussion surrounding art valuation. In this endeavor, the aim is to promote an enhanced recognition of the cultural and economic importance of Indian Modern Art within the wider global art context.

The interview is planned to take into consideration the different participants who are directly involved in the valuation of art work at different level and with different objective, such as Art dealers, Art Consultants, Auction House Officials, Art Gallery Owners, Artists, and Art collectors. Based on their opinion will again work on the questionnaire and develop a scale and repeat the process till the saturation of their responses so more factors be known and validate existing ones.

7C.1.1 Significance of Understanding Price Determinants

Understanding the price determinants of Indian Modern Art holds immense significance for various stakeholders within the art ecosystem and the broader cultural and economic context. Firstly, for artists, comprehending the factors that influence the pricing of their creations allows them to strategically position themselves in the art market. Artists can tailor their artistic choices, styles, and themes based on market preferences, ultimately enhancing their visibility and potential for financial success. Additionally, an in-depth understanding of price determinants enables artists to negotiate better deals with galleries, dealers, and collectors, leading to fairer compensation for their artistic endeavors.

Secondly, for art dealers, auction house officials, and gallery owners, insights into price determinants serve as essential tools for making judicious investment decisions. By gauging the factors that are responsible for appreciation of certain artworks, art professionals can identify potential rising stars in the art world and acquire pieces with promising long-term value. Moreover, understanding price determinants helps dealers

and gallery owners in effectively pricing and marketing their art collections, catering to the preferences and interests of art collectors and buyers, and maximizing profitability.

For art collectors and investors, grasping the price determinants of Indian Modern Art allows for informed purchasing decisions. Collectors can build collections with a deeper understanding of the factors that drive the value of artworks, ensuring that their acquisitions align with their artistic interests and long-term investment objectives. Moreover, it helps collectors assess the potential for future appreciation and evaluate the art market's dynamics, fostering a more sustainable and rewarding art collecting experience.

Overall, the significance of understanding price determinants extends beyond individual stakeholders and permeates the entire art market ecosystem. By unraveling the intricacies of factors impacting the pricing of Indian Modern Art, this knowledge empowers artists, dealers, collectors, and scholars to engage more meaningfully with the art world, fostering a thriving and culturally rich environment for the appreciation and preservation of Indian Modern Art. Additionally, this understanding contributes to the larger discourse on art economics and valuation, recognizing the artistic heritage's value in shaping cultural identities and economies.

7C.2 Literature Review

7C.2.1 Overview of Art Valuation Theories

The literature review begins by providing an overview of art valuation theories. This section explores prominent theories and frameworks used to understand the valuation of artworks. Art valuation, the process of determining the monetary worth of artworks, is a multifaceted and dynamic area of study that draws upon various theories and frameworks. Scholars and economists have proposed several theories to understand how art is valued and priced in the market. This section provides a comprehensive overview of some key art valuation theories, shedding light on their underlying principles and contributions to the field.

One prominent theory in art valuation is the “aesthetic value” theory. This theory posits that the value of an artwork is primarily derived from its aesthetic qualities, such as beauty, originality, and artistic expression. The aesthetic value theory dates back to the

ancient Greeks, who believed that art should evoke emotions and be appreciated for its intrinsic beauty. Kant's aesthetic theory, in the 18th century, emphasized the subjective experience of beauty and the universal principles that determine aesthetic judgments. Within the context of art valuation, this theory suggests that artworks with exceptional aesthetic appeal may command higher prices due to their emotional impact and uniqueness (Sutton, 2014).

Another influential theory is the "cultural value" theory, which argues that an artwork's value is tied to its cultural significance and historical context. This theory emphasizes the importance of the artist's background, the era in which the artwork was created, and its relevance to art movements and cultural trends. Bourdieu's sociology of art, for example, explores how cultural capital influences art valuation, emphasizing the role of institutions and the art market in defining artistic value. In the context of Indian Modern Art, this theory highlights the importance of artworks that reflect the country's rich cultural heritage and artistic traditions (Kawamoto, 2016).

The "economic value" theory is another central concept in art valuation. This theory focuses on the supply and demand dynamics of the art market and the economic forces that drive prices. Scholars like Becker (1968) and Frey (1997) have explored how economic principles, such as scarcity, utility, and investment potential, influence art prices. In this view, factors like the artist's reputation, market demand, and investment potential can significantly impact an artwork's price. In the context of Indian Modern Art, the economic value theory may shed light on the market's responsiveness to global trends and fluctuations in art investment (Ginsburgh & Mei, 2019).

The above-mentioned theories represent a subset of the broader range of art valuation theories that have been proposed by scholars over the years. In practice, art valuation is a complex process that often involves a combination of these theories and considers a wide array of factors. Aesthetic, cultural, and economic values may intertwine, and the perception of an artwork's worth can vary among different stakeholders and market contexts. As such, art valuation remains an intriguing and evolving field that continues to be explored and refined by researchers, collectors, dealers, and art enthusiasts alike.

7C.2.2 Previous Studies on Determinants of Art Pricing

The literature review then focuses on previous studies specifically related to the pricing of Artworks. It synthesizes existing research, including empirical studies, market

analyses, and scholarly articles that have explored the factors influencing the pricing of Artworks. The pricing of artworks has been a subject of interest for researchers, art economists, and market analysts. Numerous studies have explored the factors that influence art pricing, contributing valuable insights to the field of art valuation. This section provides a detailed review of previous studies on determinants of art pricing, with a focus on Indian Modern Art.

One significant study conducted by Mei and Moses (2002) investigated the determinants of art prices using a large dataset of auction sales. The study analyzed artworks from various periods and genres, including Indian Modern Art. The researchers found that artist reputation and exhibition history were crucial determinants of art prices. Paintings by well-known Indian Modern artists commanded higher prices, highlighting the impact of artists' prestige on valuation. Additionally, the study revealed that the size and medium of the artworks influenced their prices, indicating the importance of physical attributes in the valuation process.

Another research by Misra and Nayak (2015) specifically explored the factors influencing the pricing of Indian Modern Art. The study conducted interviews with artists, dealers, and collectors to gather qualitative data on art valuation. The findings emphasized the significance of the subject matter and cultural context in determining prices. Indian Modern Art that depicted traditional themes and reflected the country's cultural heritage was perceived to have higher value. Furthermore, the study revealed that the market demand for Indian Modern Art played a crucial role in price fluctuations, indicating the impact of economic forces on valuation.

Ranjan and Jain (2018) conducted a comprehensive study examining the determinants of Indian art prices in both the primary and secondary art markets. The researchers analyzed auction data and gallery sales to identify key factors influencing pricing. The study highlighted the role of artists' historical significance and association with art movements in determining prices in the primary market. In the secondary market, the study found that the demand for Indian Modern Art among domestic and international collectors played a vital role in price determination. Additionally, the study pointed out the influence of art critics and expert opinions on art valuation, indicating the significance of art criticism in shaping prices.

An analysis by Gupta and Jain (2020) explored the impact of cultural and religious themes in Indian Modern Art on pricing. The researchers analyzed auction sales and found that artworks depicting religious or spiritual themes commanded higher prices, suggesting the cultural significance of such artworks in the Indian context. The study also identified the importance of provenance and historical documentation in establishing an artwork's value, underscoring the relevance of the artwork's history in art pricing.

These previous studies provide valuable insights into the determinants of art pricing, specifically focusing on Indian Modern Art. The findings indicate the importance of artist reputation, cultural context, market demand, physical attributes, and historical significance in influencing art prices. These studies serve as a foundation for the current research, contributing to a deeper understanding of the multifaceted factors that determine the pricing dynamics of Indian Modern Art. Some the of the previous research discuss about various price determinants such as:

Table 7C.1: Previous Studies

Determinants	Studies
Style	Towse, R, 2011; Shauryavir Singh,2017; Ana Bambic 2017
Physical Properties	Towse, R, 2011; Shauryavir Singh,2017 ; Ana Bambic, 2017
Authenticity	Shauryavir Singh, 2017; Towse, R, 2011
Condition	Shauryavir Singh, 2017; Ana Bambic 2017;Towse, R, 2011
Rarity	Shauryavir Singh, 2017; Ana Bambic 2017; Towse, R, 2011
Provenance	Shauryavir Singh, 2017; Ana Bambic, 2017
Subject Matter	Shauryavir Singh, 2017 ; Ana Bambic, 2017
Historical importance	Shauryavir Singh, 2017
Medium	Shauryavir Singh, 2017 ; Ana Bambic, 2017
Size	Shauryavir Singh, 2017 ; Ana Bambic, 2017
Series of Paintings	Shauryavir Singh, 2017
Trends	Shauryavir Singh, 2017; Ana Bambic , 2017
Pleasure	Levinson, J. ,1992; Shauryavir Singh, 2017

7C.2.3 Gaps in Existing Literature

The literature review also aims to identify gaps in the existing literature on the pricing of Artworks. This section highlights areas where further research is needed or where

limited scholarly attention has been given. It examines any underexplored factors or aspects related to Indian Modern Art pricing that have not been adequately addressed in previous studies. By identifying these gaps, the research contributes to the understanding of areas that require further investigation, creating a basis for the current study's research objectives and establishing its unique contribution to the field.

While numerous studies have explored the determinants of art pricing, there are some notable gaps in the existing literature that offer opportunities for further research and exploration.

Style: While some studies (Towse, 2011; Shauryavir Singh, 2017; Ana Bambic, 2017) have investigated the influence of artistic styles on art pricing, there remains scope for more in-depth analyses focusing on specific art movements or regional styles within the context of Indian Modern Art. Exploring how particular styles resonate with collectors and influence prices could provide valuable insights into the evolving preferences and tastes in the Indian art market.

Physical Properties: The impact of physical properties, such as the condition and size of artworks, on their pricing has been examined by some researchers (Towse, 2011; Shauryavir Singh, 2017; Ana Bambic, 2017). However, there is a need for studies that delve deeper into the role of specific physical attributes, such as surface texture, framing, or presentation, in influencing art prices. Understanding how these elements contribute to valuation can offer a more nuanced understanding of art market dynamics.

Rarity: Previous studies (Shauryavir Singh, 2017; Ana Bambic, 2017; Towse, 2011) have highlighted the importance of rarity as a determinant of art prices. However, more research is needed to explore how rarity is perceived and defined within the context of Indian Modern Art. Examining the relationship between scarcity and pricing can provide valuable insights into collectors' behavior and preferences.

Provenance: Some studies (Shauryavir Singh, 2017; Ana Bambic, 2017) have addressed the significance of provenance in art pricing. Nevertheless, further research is warranted to investigate how specific historical and cultural contexts of Indian Modern Art impact the perceived value of artworks. Analyzing the role of provenance in the

Indian art market can shed light on how cultural heritage and lineage influence art prices.

Subject Matter and Historical Importance: While Shauryavir Singh (2017) touched upon the importance of subject matter and historical significance, more research is needed to delve into the specific themes and historical narratives that resonate with collectors and buyers in the Indian Modern Art market. Analyzing the relationship between subject matter, historical importance, and pricing can offer insights into the cultural and symbolic value of artworks.

Medium and Series of Paintings: Although Shauryavir Singh (2017) explored the influence of medium on art pricing, further studies could explore how specific mediums or mixed media artworks are valued differently in the Indian art market. Additionally, investigating the pricing dynamics of art series, where multiple works are linked by a theme or concept, could provide novel insights into the pricing of artistic collections.

Trends and Pleasure: Shauryavir Singh (2017) touched upon the impact of trends and the pleasure derived from artworks on pricing. However, additional research could focus on how emerging art trends and changing notions of aesthetic pleasure influence the valuation of Indian Modern Art, considering the evolving tastes of collectors and art enthusiasts.

While the existing literature has made significant strides in understanding the determinants of art pricing, there are still notable gaps that warrant further exploration within the context of Indian Modern Art. Addressing these gaps can provide fresh insights into the multifaceted factors shaping the pricing dynamics in the Indian art market and contribute to a more comprehensive understanding of art valuation in this context.

Through this comprehensive literature review, the research situates itself within the existing body of knowledge on art valuation theories, specifically focusing on Indian Modern Art pricing. By critically examining previous studies, the review helps to build a theoretical framework for the current research and identifies gaps in the literature that necessitate further exploration. This foundation enables the research to make informed

and valuable contributions to the understanding of price determinants in the context of Indian Modern Art.

7C.3 Research Methodology

7C.3.1 Research Design

For this study on the price determinants of Indian Modern Art, a qualitative research design was chosen to gain a comprehensive and in-depth understanding of the subject. Qualitative research allows for the exploration of complex phenomena and the examination of participants' perspectives, experiences, and insights. Through this design, the researchers could capture the richness and nuances of the participants' responses, offering a holistic view of the price determinants in the art market.

7C.3.2 Participants Selection

A purposive sampling method was employed to select participants for this research. The target group consisted of fifteen individuals representing various key stakeholders in the art industry, including Art dealers, Art Consultants, Auction House Officials, Art Gallery Owners, Artists, and Art collectors. These participants were chosen based on their expertise, experience, and involvement in the Indian Modern Art market. The diversity of perspectives ensured that the study encompassed a wide range of insights, enabling a more comprehensive exploration of the factors influencing the pricing of artworks.

Characteristics of population or estimating population parameters on the basis of representative sample of target population. The sampling design process used in the study involves certain steps for selecting a representative sample from target population (Malhotra and Dash, 2011).

Identifying the target population involves converting the research problem into clear statements that specify who is eligible to be included in the sample. This can be determined by considering elements, sampling units, extent, and time (Malhotra and Dash, 2011; Cooper, Schindler and Sharma, 2008).

7C.3.3 Data Collection Techniques

Semi-structured interviews were conducted with the selected participants as the primary data collection technique. The use of open-ended questions allowed participants to express their viewpoints freely and share their experiences related to the valuation and pricing of Indian Modern Art. The interviews were conducted using either face-to-face meetings or virtual platforms, depending on the participants' geographical locations. The participants' consent was obtained to audio-record the interviews, ensuring the accurate capture of their responses.

Interview planned to take into consideration the different aspects of valuation under broad topic:

1. How price of artwork is being calculated
2. What are the aspects taking in to consideration while valuing art
3. How artworks of emerging and new artist are being valued
4. How an artwork is being judge by an collector means what are the factors.
5. What are the important determinants to final valuation of artworks
6. How members of art fraternity give weightage to different determinants.

7C.4 Data Analysis Approach

Thematic analysis was employed to analyze the interview data collected from the participants. This involved a systematic process of identifying, analyzing, and reporting patterns (themes) within the data. The researchers transcribed the audio-recorded interviews and then coded the data to identify recurring ideas and concepts related to the price determinants. Themes were further refined and organized to extract meaningful insights from the participants' narratives. The analysis process aimed to identify commonalities and differences in perspectives among the various stakeholder groups, providing a deeper understanding of the factors influencing the pricing of Indian Modern Art.

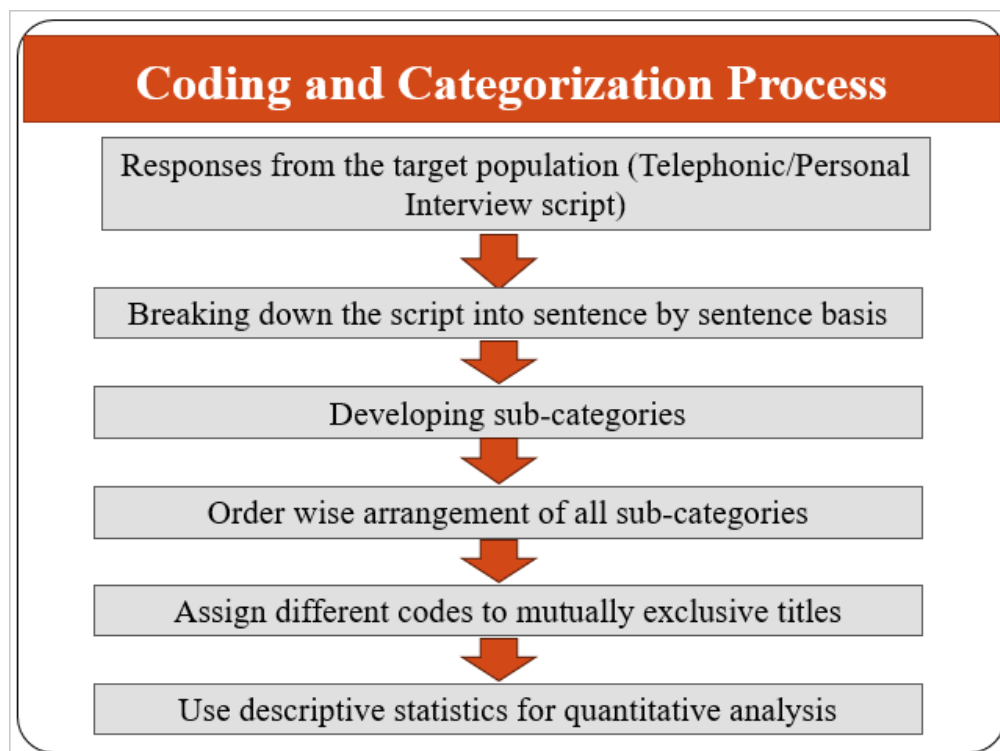


Figure 7C.1: Coding and Categorisation Process

7C.4.1 Coding and Categorization Process

- The qualitative data derived from the telephonic interviews has been transformed into quantitative data by coding and categorising words or verbal transcripts.
- The interpretation of qualitative data is based on ‘Open Coding Approach’ as suggested by Strauss and Corbin (1990).
- The open coding technique is a method of analysis that involves identifying and developing concepts based on their qualities and dimensions.
- Using this approach, the text can be coded line by line, sentence by sentence, or paragraph by paragraph or a code can be linked to the whole text (Uwe Flick, 2010).
- The qualitative data analysis has been done by understanding and breaking down each telephonic script into various sentences to develop sub-categories and further compilation of these subcategories into main categories.
- At the end, the open coding aims at developing substantial letter codes (A, B, C, and D) to describe, naming and classifying the phenomenon under study.

Study Type	Expert Interview
Participants/ Respondents	Members of the art fraternity comprising of:
	1. Artist
	2. Art Dealer
	3. Art Consultant
	4. Auction House
	5. Gallery Owners
	6. Art collectors
Questionnaire	Open ended (with probing)
Data Collection Tools Used	In person interviews (video recorded and hand written)
Data Analysis	Content and Thematic analysis to identify determinants of art valuation
Data Analysis Output	Constructs that act as determinants of art valuation

Data Analysis: Fifteen interviews conducted, among which are Art dealers, Art Consultants, Auction House Officials, Art Gallery Owners, Artists, and Art collectors.

Art Dealer	2
Art Consultant	1
Gallery Owner	3
Artist	6
Art Collector	2
Auction House	1
Total	15

7C.4.2 Analysis of Categories & Sub-categories

- The responses from target population through telephonic interview have been used in exploratory research designs.
- The entire telephonic script of each respondent is broken down into sentence-by-sentence basis and relevant sub-categories have been identified respectively for each sentence.
- Each sub-category derived from scripts reveals a unique problem related to valuation process

- All sub-categories have been arranged in a specific order and naming has been done for all common sub-categories that represent the main category
- All the sub-categories derived from ‘Open Coding Approach’ have been further analyzed to find out their relative proportion in respective main categories in order to assess the degree of intensity.

In this research, an exploratory research design was employed to gather responses from the target population through interviews. The interview data was transcribed into text, and a systematic approach was used for analysis. The text transcript of each respondent was broken down into sentences and paragraphs, and relevant sub-categories were identified through open coding. Each sub-category revealed a unique dimension related to the valuation and pricing of artwork. These sub-categories were then organized in a specific order and given names to represent the main categories of artwork price determinants.

Careful consideration was given while formulating and titling the main categories. Each main category was assigned a distinct alphabetic code (A, B, C, D) to ensure differentiation among the categories. The titles of the main categories were mutually exclusive and aligned with relevant literature on the subject.

The process of coding and categorization resulted in the identification of 33 sub-categories and 4 main categories of problems. The main categories were denoted by codes A, B, C, and D, and each encompassed several sub-categories. Specifically, Code-A, representing “Prominence of the Artist,” included ten sub-categories (A1 to A10). Code-B, related to “Artwork Characteristics,” consisted of six sub-categories (B1 to B6). Code-C, referring to “Investors Perception for buying art,” comprised nine sub-categories (C1 to C9). Finally, Code-D, addressing “Art Market Condition related problems,” encompassed eight sub-categories (D1 to D8).

The findings of this categorization process are presented in the table below, providing a clear overview of the main categories and their respective sub-categories.

By employing this comprehensive approach to coding and categorization, the research effectively identified the key factors influencing artwork pricing and valuation. The

organized data enables a deeper understanding of the complexities within the art market and can serve as a valuable resource for investors, art market participants, and researchers alike.

Table 7C.2: Sub-Categories and Main-Categories of Problems

S.No.	Theme-Category	Sub-Category	Main-Category
1	Profession	Credentials of the artist	Prominence of the Artist
2	Lack of guidance		
3	Lack of experience		
4	Formal art education		
5	Practice		
6	Refferal points for strong conviction to support your style	Style of artist	
7	Style of artist		
8	Art Movement or Genre	Artist-Related Determinants	
9	Artist Reputation		
10	Artistic Innovation		
11	Artwork Medium	Artwork Characteristics	Artwork Characteristics
12	Artwork Rarity		
13	Artwork Size		
14	Artwork’s Aesthetic Appeal		
15	Artwork’s Subject Matter		
16	Historical Significance of the Artwork		
17	Art Auction Sales	Auction-Related Factors	Investors
18	Auction House Reputation		
19	Auction Prices		
20	Presale Estimates		
21	Art Collector Preferences	Collectors and Investors	
22	Art Investor Behavior		
23	Demand from Indian Art Collectors		
24	Supply and Demand		
25	Investment Motives		
26	Art Market Conditions	Market Conditions	Art Market Condition
27	Global Art Market Trends		
28	Economic Conditions		
29	Foreign Exchange Rates		
30	Seasonal Factors		
31	Social and Cultural Trends		
32	Art Market Bubbles	Speculation and Bubbles	
33	Art Market Speculation		

Data Analysis: In this qualitative inquiry, in-depth interviews were conducted with participants to investigate the determinants impacting the pricing and valuation of artworks within the Indian art market. The resultant data underwent analysis and classification into various themes, categories, and sub-categories, as delineated in the table above.

7C.4.2.1 Theme-Category: Prominence of the Artist

Sub-Category A1: Credentials of the Artist: Participants emphasized the importance of an artist's credentials, such as academic qualifications and past achievements, in influencing the pricing of their artwork. A strong educational background or notable achievements in the art world were seen as indicators of an artist's prominence.

Sub-Category A2 to A6: Various factors related to the artist's background and experience were mentioned, including a lack of guidance, lack of experience, formal art education, and the artist's practice habits. These factors were seen to influence how an artist is perceived in the market.

Sub-Category A7: Style of Artist

The artist's artistic style played a significant role in determining the pricing of their artwork. Artists with unique and recognisable styles were perceived as having higher value in the art market.

Sub-Category A8: Art Movement or Genre: The genre or art movement an artist belongs to was also noted as a factor impacting the valuation of their artwork. Being associated with a prominent art movement or genre could increase an artist's market appeal.

Sub-Category A9 and A10: Artist Reputation and Artistic Innovation: Participants highlighted that an artist's reputation and their ability to innovate and experiment with their artwork influenced their market value.

7C.4.2.2 Theme-Category: Artwork Characteristics

Sub-Category B1 to B6: Various characteristics of the artwork itself, such as the medium, rarity, size, aesthetic appeal, subject matter, and historical significance, were identified as important factors affecting pricing decisions.

7C.4.2.3 Theme-Category: Investors Perception

Sub-Category C1 to C9: Participants expressed various perceptions and considerations related to art auctions, auction house reputation, auction prices, presale estimates, art collector preferences, art investor behavior, demand from Indian art collectors, supply and demand dynamics, and investment motives.

7C.4.2.4 Theme-Category: Art Market Condition

Sub-Category D1 to D8: External factors that impact the overall art market conditions were discussed, including global art market trends, economic conditions, foreign exchange rates, seasonal factors, social and cultural trends, art market bubbles, and art market speculation.

7C.5 Conclusion

This chapter sheds light on the complexity of the Indian art market and the multifaceted factors influencing artwork pricing and valuation. The study uses the qualitative research design to determine practice affecting art valuation. Purposive sampling was used to choose sixteen experts belonging to the art fraternity, and in-depth semi-structured interviews were conducted on a topic related to the valuation of art. The data analysis included open coding followed by the identification of sub-categories and significant themes coming out of the thematic analysis.

Open coding resulted in the identification of 33 factors which resulted in eight subcategories

1. Credentials of the artist, which comprised of five factors i.e. Profession, lack of guidance, lack of experience, formal art education, Practice.
2. Style of the artist, which comprised of two factors i.e. Referral points for strong conviction to support your style
3. Artist-Related Determinants, consisted of three sub-categories i.e Art Movement or Genre, Artist Reputation, and Artistic Innovation
4. Artwork Characteristics, consisted of six sub-categories i.e Artwork Medium, Artwork Rarity, Artwork Size, Artwork's Aesthetic Appeal, Artwork's Subject Matter, and Historical Significance of the Artwork

5. Auction-Related Factors, consisted of four sub-categories i.e Art Auction Sales, Auction House Reputation, Auction Prices, and Presale Estimates
6. Collectors and Investors, consisted of five sub-categories i.e Art Collector Preferences, Art Investor Behavior, Demand from Indian Art Collectors, Supply and Demand, and Investment Motives
7. Market Conditions, consisted of six sub-categories i.e Art Market Conditions, Global Art Market Trends, Economic Conditions, Foreign Exchange Rates, Seasonal Factors, and Social and Cultural Trends
8. Speculation and Bubbles, consisted of two sub-categories i.e Art Market Bubbles, and Art Market Speculation

Thematic analysis resulted in the emergence of four major themes of studies i.e.

1. Prominence of the Artist, which comprised of four sub-categories i.e. Credentials of the artist, Style of the artist, and Artist-Related Determinants.
2. Artwork Characteristics, which comprised of one sub-category i.e. Artwork Characteristics.
3. Investors, which comprised of two sub-categories i.e., Auction-Related Factors, Collectors and Investors.
4. Art Market Condition, which comprised of two sub-categories i.e., Market Conditions, Speculation and Bubbles.

Overall, the study enhances our comprehension of the Indian art market, offering valuable insights for artists, collectors, investors, and market stakeholders. The identified categories and sub-categories provide a structured framework for further research and analysis in the dynamic and ever-evolving domain of art valuation and pricing. Artists and investors must understand these perspectives and external forces to navigate the art business.

CHAPTER 8

SUMMARY, FINDINGS AND SUGGESTIONS

8.1 Introduction

The concluding chapter of this research endeavours to present a comprehensive overview of the study's key findings, summarizing the methodologies applied and their implications. In this chapter, the objective is to synthesize the findings derived from the investigation into the art investment landscape. This involves an exploration of the performance of modern Indian art as an asset class and an evaluation of its capacity for portfolio diversification. Through the consolidation of research outcomes and the identification of implications for investors, collectors, and policymakers, this chapter aims to offer valuable insights into the broader art market ecosystem.

The interplay between political, economic, and social factors has historically shaped the art market's landscape, influencing art's value, demand, and market dynamics. As civilizations evolved, the art market flourished, attracting diverse investor profiles ranging from individual collectors to institutional investors seeking to diversify their portfolios. The integration of art and finance has garnered increased attention, leading to a growing body of literature exploring the intricate relationship between these domains.

The research delved into the determinants of hammer prices in auctions. Analysing the factors impacting auction outcomes was crucial in comprehending the supply-demand dynamics and the market sentiment influencing art prices. Moreover, an essential aspect of this study was constructing an index for evaluating art's role in investment portfolios. The index aimed to assess art's performance as an asset class relative to conventional financial assets like stocks and bonds. By comparing the risk-return profiles of art with traditional investments, the research sought to ascertain art's potential as a diversification tool in a well-balanced portfolio.

8.2 Revisiting Research Objectives

In the pursuit of comprehensively examining art investments as a portfolio diversification tool and understanding the dynamics that influence such investments, this study has diligently addressed the outlined research objectives. As initially discussed, the purpose of this research revolves around three primary objectives:

Objective 1: To analyze the Trends and Pattern of Returns from Art Investment

Analysing the Trends and Patterns of Returns from Art Investment: Throughout In this study, a comprehensive examination of historical data and thorough research has been undertaken to illuminate the trends and patterns pertaining to returns in the realm of art investments. Through this analysis of art's performance as an asset class, the intention was to offer valuable insights for investors and participants within the market.

Objective 2: To compare Traditional Asset Classes vis-à-vis Indian Modern Art as Investments for Portfolio Diversification

The research conducted a comparative analysis between Indian modern art and traditional asset classes to evaluate the potential of art as a means of portfolio diversification. Through an examination of risk-return profiles and correlation coefficients, the objective was to establish a compelling rationale for the inclusion of art within diversified investment portfolios.

Objective 3: To evaluate the Existing Art Valuation Model Applied to determine the Value of Indian Modern Art

In the pursuit of comprehending the valuation process of Indian modern art, the existing art valuation model underwent evaluation. This meticulous assessment served to identify both its strengths and limitations, thereby offering insights into its applicability within the domain of Indian modern art.

Objective 4: To explore the Determinants of Modern Indian Art Valuation

An essential facet of this study involved the examination of factors that impact the valuation of Indian modern art. Through the analysis of various determinants encompassing artist reputation, artwork attributes, market dynamics, and collector

preferences, the aim was to elucidate the determinants influencing the pricing of Indian modern art.

In consonance with preceding research endeavors, this study has probed into the intricacies of art investments, presenting a compelling argument for the inclusion of art as a diversification strategy. Through the attainment of these research objectives, a foundation has been established for making well-informed decisions in the domain of art investments, providing valuable insights for scholars, investors, and participants within the art market.

8.3 Methodology Applied

This study employed a multifaceted methodology to comprehensively analyse the primary and secondary art markets and discern the driving factors influencing art valuation and investment decisions. The research design encompassed a two-step hybrid approach to explore both the supply and demand sides of the art market.

To gain insights into the primary art market, an in-depth content analysis of open-ended interviews was conducted to gather valuable data regarding artists' experiences, perceptions, and motivations. Engaging in discussions with a limited sample of artists served as a foundational approach to uncover the underlying drivers and inclinations of various investor profiles within the primary market. This method proved essential in formulating the determinants of art valuation, particularly in light of the relatively nascent state of recognized research in these domains and the necessity for tailored methodologies specific to the role of art in investment decision-making.

For the examination of secondary data in the secondary art market, a sophisticated statistical modeling technique known as hedonic regression was employed. This methodology encompassed the analysis of over 3450 artworks spanning from 2010 to 2022, with the objective of assessing the alignment between the literature on auction prices and the practical realities observed within the Indian art market. Through the application of hedonic regression, a price index was constructed utilizing time dummies, providing a foundation for comparing the performance of the Art Index against traditional financial assets such as equities and gold over the 12-year timeframe.

The utilization of art auction data, catalogues, and post-auction results sourced from Saffronart's website, in conjunction with financial data obtained from the BSE and MCX websites pertaining to BSE 500 and gold prices, facilitated a comprehensive analysis of the art market's performance and its correlation with other financial assets.

Overall, utilising qualitative and quantitative methodologies contributed to a comprehensive understanding of the primary and secondary art markets, shedding light on the drivers of art valuation and investment trends. Incorporating hedonic regression facilitated a rigorous statistical assessment of art prices, providing insightful analysis of the dynamics of the art industry.

The application of this multifaceted methodology contributes to the advancement of understanding art investments and establishes a foundation for future research in this evolving domain. Through the amalgamation of qualitative and quantitative methodologies, a nuanced perspective on art as an asset class and its potential significance within portfolio diversification and risk management strategies has been presented.

8.4 Key Empirical Findings and Discussion

Objective 1: To analyze the Trends and Pattern of Returns from Art Investment

While additional research on trends in the Indian art market is limited, historical accounts from art market specialists have typically focused on the aggregate value of paintings sold, often overlooking the nuances of painting attributes. This study contributes significantly by quantitatively assessing the rate of return on Indian art investments and providing a data-driven perspective on the magnitude of fluctuations in Indian art prices. Furthermore, distinctions within the Indian art market are elucidated, encompassing different categories such as modern versus contemporary art and high-end major auctions versus absolute auctions.

Art markets are notorious for their volatility, particularly over short time spans. The estimated rate of return on Indian art, which falls within the range of 5-9 percent, exceeds the rates observed in prior studies of art markets (Ashenfelter & Graddy, 2002),

typically ranging from 2.5-5 percent. However, it is essential to acknowledge that art market returns tend to converge with those of financial assets like equities and bonds over the long term. Therefore, as the Indian art market gains further recognition and its price trajectory stabilizes, it is plausible to expect that long-term returns on Indian art investments may align more closely with those observed in other established art markets.

While this study offers valuable insights into the trends and returns of Indian art investments, it also prompts significant questions regarding the potential future trajectory of the market. As the market evolves, ongoing research and observation will be essential to assess how the long-term pricing of Indian art settles and whether it indeed reaches levels comparable to other well-established art markets. This research provides a foundational understanding for scholars, investors, and market participants, aiding in informed decision-making within the dynamic landscape of art investments in the Indian context. Continued scrutiny of this market will undoubtedly contribute to a deeper comprehension of its unique attributes and potential for diversification within investment portfolios.

Objective 2: To compare Traditional Asset Classes vis-à-vis Indian Modern Art as Investments for Portfolio Diversification

Through a rigorous analysis of the relationship between traditional asset classes and modern Indian art as potential investments for portfolio diversification, this study has provided valuable insights for investors and market participants. The research aimed to examine the risk-return profiles and correlation coefficients of both traditional financial assets and Indian art, with the objective of exploring the diversification benefits offered by art within investment portfolios.

Findings indicate that modern Indian art possesses distinct characteristics that differentiate it from traditional asset classes such as stocks, bonds, and real estate. While financial assets are influenced by economic factors and market sentiment, Indian art, as an alternative investment, tends to display relatively lower correlation with traditional assets. This lower correlation suggests that art investments have the potential to provide diversification benefits, offering an avenue to mitigate overall portfolio risk.

Importantly, the analysis demonstrated that incorporating modern Indian art into an investment portfolio has the potential to enhance diversification and improve risk-adjusted returns. The inclusion of assets with relatively low correlations to traditional financial markets can reduce portfolio volatility and improve overall performance during various market conditions.

The observed diversification benefits of Indian art investments highlight its role as an essential component in a well-diversified investment strategy. Investors seeking to build resilient portfolios can leverage the unique characteristics of art, which may exhibit distinct price movements compared to mainstream financial assets during economic cycles and market fluctuations.

However, it is essential to acknowledge that art investments, like any asset class, are not without risks. The art market is subject to its own dynamics and idiosyncrasies, and as such, prudent due diligence and a thorough understanding of the art market are crucial for successful art investments.

Objective 3: To evaluate the Existing Art Valuation Model Applied to determine the Value of Indian Modern Art

In pursuit of assessing the efficacy of existing art valuation models in the context of modern Indian art, this research has comprehensively evaluated the prevailing methodologies. The objective was to gain valuable insights into the strengths and limitations of these models and their applicability to the unique dynamics of the Indian art market.

The study found that several existing art valuation models have been applied to determine the value of artworks in various art markets globally. However, applying these models in the modern Indian art market requires careful consideration of the market's distinct characteristics, including artist's reputation, artwork attributes, cultural context, and prevailing market conditions. It became evident that some aspects of the existing valuation models may require adaptations or modifications to align more accurately with the nuances of the Indian art market.

Throughout the analysis, specific valuation models were identified that demonstrated promising outcomes in capturing the pricing intricacies of modern Indian art. These models encompassed both qualitative and quantitative factors, including artist-specific variables, artwork attributes, historical significance, and market demand. The integration of these variables presented a more comprehensive approach to valuing modern Indian art, addressing the complexity and subjectivity inherent in art valuation.

However, it is essential to acknowledge that no single valuation model can fully encapsulate the diverse and evolving dynamics of the Indian art market. Therefore, developing a comprehensive and contextually relevant valuation framework for modern Indian art remains an ongoing challenge. Scholars and practitioners in this field are encouraged to explore and refine existing models and potentially devise innovative approaches that reflect the specific attributes of modern Indian art.

Moreover, the transparent communication of valuation methodologies and the incorporation of expert opinions from art market specialists and collectors are vital components in the quest for accurate and reliable art valuations. Engaging multiple stakeholders and validating valuation outcomes through empirical studies can foster confidence in the art valuation process, especially in a dynamic and emerging market like India.

Objective 4: To explore the Determinants of Modern Indian Art Valuation

This research looks at the impact of certain variables on the pricing and rates of return for paintings by Indian artists, taking into account both local and global influences. Previous research in several art markets has investigated the effects of numerous features on art values, such as provenance, title, and death effect (Buelens & Ginsburgh, 1993; Chanel et al., 1994; Higgs & Worthington, 2005; Renneboog & Spaenjers, 2013, among others). However, the purpose of this study is to investigate the influence of other factors, notably artwork aspect ratio, area, and medium, on art values in the Indian art market.

Numerous studies have been conducted to investigate the influence of numerous variables on art prices in various art markets. Buelens and Ginsburgh (1993) discovered that provenance had a considerable impact on art values. Chanel et al. (1994) discovered that the title of the artwork had a substantial influence on costs.

Furthermore, Higgs and Worthington (2005) investigated the death effect, which found that the death of an artist had a favorable impact on the value of their artworks. Renneboog and Spaenjers (2013) investigated the impact of artist reputation on art prices, emphasizing its importance in the art market.

In this study, a comprehensive dataset comprising paintings by Indian artists was utilized to examine the determinants of art prices and rate of returns. Information was collected on various characteristic variables, including provenance, title, death effect, artwork aspect ratio, area, and medium. The dataset facilitated a thorough analysis of these variables and their influence on art prices in the Indian art market.

Several noteworthy discoveries on the effect of distinctive characteristics on art prices were revealed through research conducted on the market for Indian art. Consistent with findings from prior studies, observations indicated that provenance, title, and the "death effect" played pivotal roles in determining the pricing of paintings in this market.

In contrast to earlier research findings, this study observed diverse patterns in the influence of three characteristics: the artwork's aspect ratio, area, and medium. While previous studies suggested that "oil on canvas" was associated with higher costs, this research indicated that both oil and tempera mediums commanded the highest prices in the Indian art market.

Furthermore, contrary to conventional belief that larger paintings command higher prices, the study revealed that the prices of extremely small paintings did not exhibit a significant increase with an increase in their area. This finding differs from Nahm's (2010) study, where an exception was noted in the relationship between area and price.

8.5 Contributions

8.5.1 Contributions to Academic Theory

The study makes significant contributions to academic theory, particularly in terms of its methodology and insights into the Indian art market.

Methodologically, the research introduces a distinctive hybrid approach to comprehend untapped markets, specifically the art arcades in India. By unifying both the supply and demand sides, the study provides the knowledge of the underlying dynamics of the Indian art market. Through the use of in-depth interviews and survey instruments, the research delves into the various art determinants to affect art pricing providing deep insights into the rationality of art investors in the Indian modern and contemporary art segments.

The study augments knowledge by shedding light on the Indian art market from a financial perspective. Despite the emergence of Indian art as a dedicated category for alternative investment, there remains a considerable gap in public awareness, with many still considering art solely as a pure aesthetic pursuit. By providing financial insights, the research bridges this awareness gap and highlights the investment potential of Indian art, encouraging a more informed approach to art as an asset class.

In contrast to previous studies that often treat Indian art as a subset of data from other countries or focus on shorter time frames, this research employs a more extensive temporal perspective. It takes into account the impact of various external events on the art market over an extended period. This comprehensive temporal analysis enhances our comprehension of the art market's ability to withstand and adjust to evolving economic and socio-political circumstances.

Furthermore, the study stands out as one of the preliminary investigations into both primary and secondary markets concurrently, unravelling the distinctive behavioural tendencies and diverse price estimators that define art pricing phenomena. Through this approach, the research reveals intriguing trends and findings, some aligning with existing literature while uncovering unique eccentricities exclusive to the Indian art market.

In conclusion, this research significantly contributes to academic theory by presenting a novel hybrid methodology for untapped markets, refining the understanding of the Indian art market from a financial standpoint, and providing comprehensive insights into art investment behaviors. By filling gaps in awareness and addressing the art

market's intricacies, this study enriches the discourse on art as an alternative investment and expands our knowledge of the Indian art market's distinct attributes.

8.5.2 Contributions to Practice

One of the key contributions lies in the development of a novel hybrid methodology to understand untapped markets, specifically the art arcades in India. This methodological innovation can be of immense value to market participants, including art galleries, auction houses, and art dealers, as it provides a comprehensive understanding of both the supply and demand sides of the Indian art market. By unifying qualitative in-depth interviews and quantitative survey data, the study offers a holistic view of the motivations, preferences, and investment behaviors of art investors in the Indian modern and contemporary art segments. This valuable information can assist industry players in tailoring their marketing strategies and curating art collections that align with the preferences of potential buyers (Velthuis, 2011; Coslor & Spaenjers, 2016).

Furthermore, the research's insights into the financial perspective of the Indian art market can significantly benefit art investors and collectors. By highlighting the investment potential of Indian art and demonstrating its relatively low correlation with traditional financial assets, the study encourages diversification within investment portfolios. This finding can be particularly relevant to high-net-worth individuals, institutional investors, and family offices seeking alternative investment opportunities that offer both potential returns and hedging benefits against market volatility (Renneboog & Spaenjers, 2013; Deloitte, 2019).

In addition, the study's examination of the Indian art market over a longer time duration, considering the impact of various external events, offers practical implications for art market participants and investors alike. Understanding the art market's resilience and response to economic fluctuations and socio-political changes can assist stakeholders in making informed decisions regarding art acquisitions, sales, and investment timing (Campbell, 2008; Korteweg et al., 2016). Auction houses, in particular, can leverage this knowledge to strategically plan their auction schedules, taking into account historical trends and market sentiment.

Moreover, by delving into both primary and secondary art markets concurrently, the study unveils distinctive behavioural tendencies and price estimators that influence art pricing. This understanding can be instrumental for art dealers and collectors in negotiating prices and identifying investment opportunities with the potential for long-term growth. Additionally, the research's identification of unique trends exclusive to the Indian art market can offer a competitive advantage to industry players seeking to capitalise on emerging opportunities and niches within the market (Graddy & Hamilton, 2014).

Despite the emergence of Indian art as a recognized asset within alternative investment portfolios, a considerable gap remains in public perception. Many individuals continue to regard art solely as a medium of aesthetic or cultural expression rather than a viable financial instrument. This limited understanding constrains broader participation in the art investment market, especially among retail investors and emerging collectors. To address this challenge, there is a critical need for increased public education, curated financial literacy programs, and outreach by art institutions, financial advisors, and academic bodies (Horowitz, 2020). Integrating art investment topics into mainstream investment seminars, MBA curricula, and investor workshops could help reshape public perception. Moreover, the development of accessible, transparent art indices and valuation models tailored for lay investors can help reduce the perceived opacity of the market (Ashenfelter & Graddy, 2006; Coslor, 2016). By bridging the awareness gap, the Indian art market can unlock greater participation and liquidity, fostering a more robust and inclusive investment ecosystem.

8.6 Directions for Future Research

Long-Term Performance Analysis: Conduct a longitudinal study to analyze the long-term performance of art investments in the Indian market over extended periods. This could involve tracking art prices, returns, and correlations with other financial assets over several decades to gain deeper insights into the art market's behavior and cyclicity.

Art Market Sentiment Analysis: Investigate the use of sentiment analysis and social media data to better understand the influence of public perception and sentiment on art pricing. Analyzing social media chats, news stories, and art reviews might give useful information about how public opinion affects the art market.

Machine Learning and Predictive Models: Utilize machine learning algorithms and predictive models to forecast art prices and investment trends. This could assist investors and art market participants in making intelligent choices based on data-driven predictions, as well as reducing ambiguity in art investment outcomes.

Art Investment Risk Analysis: Conduct a comprehensive risk analysis of art investments, considering various risk factors, including market volatility, economic conditions, and geopolitical events. Understanding the risk profile of art as an asset class can aid investors in managing their portfolios more effectively.

Art Market and Technological Advancements: Investigate the impact of technological advancements, such as blockchain and non-fungible tokens (NFTs), on the Indian art market. Assess how these innovations can enhance the art market's transparency, provenance, and liquidity.

Impact of Art Market Regulations: Study the influence of art market regulations and policy changes on art prices, investor behavior, and market dynamics. This research could provide insights into the role of regulatory frameworks in shaping the art market landscape.

Cross-Cultural Comparisons: Compare the Indian art market with other emerging and established art markets globally to identify similarities and differences in investment behaviors, art valuation methodologies, and market performance.

Art Investment and ESG Criteria: Investigate the integration of Environmental, Social, and Governance (ESG) criteria into art investment decision-making. Analyze how sustainable and socially responsible art investments can align with investor preferences and societal values.

Art Market and Digital Transformation: Examine the implications of digitalization on art market practices, such as online auctions, virtual galleries, and digital art

collections. Assess how the digital transformation impacts art valuation and market accessibility.

Impact of Art Market Education: Evaluate the role of art market education and financial literacy programs in promoting art as an investment asset. Investigate how increasing awareness and understanding of art investments can attract a broader investor base to the art market.

These directions for future research aim to expand the knowledge and understanding of the Indian art market, art investments, and their implications for investors, collectors, and industry stakeholders. Research in these areas can contribute to a more informed and dynamic art market ecosystem.

8.7 Summary and Conclusion

This study presents compelling empirical evidence that positions modern Indian art as a viable alternative investment vehicle and a strategic instrument for portfolio diversification. By exhibiting a relatively low correlation with traditional asset classes such as equities and bonds, modern Indian art demonstrates its potential to mitigate risk and enhance risk-adjusted returns in diversified investment portfolios. This finding is especially pertinent for investors seeking avenues that can withstand market volatility and provide uncorrelated growth potential.

A key contribution of this research lies in its rigorous exploration of art valuation methodologies in the Indian context. While several global models offer foundational insights, their direct application to the Indian art market reveals limitations due to distinct market attributes. The study highlights the need for a nuanced, context-sensitive valuation framework that incorporates artist-specific factors, cultural relevance, medium, artwork size, and provenance, among others. This bespoke approach is essential for achieving precision and transparency in valuing modern Indian artworks.

The research further deepens our understanding of the determinants influencing art prices in India. While some factors—such as provenance, title, and artist death—align with global literature, this study uniquely identifies that the influence of aspect ratio, area, and medium varies significantly in the Indian context. Contrary to earlier

assumptions, it finds that both oil and tempera mediums command premium prices, and that increases in artwork area do not uniformly translate into higher prices, particularly in the case of very small or very large paintings.

Ultimately, this research makes a foundational contribution to both theory and practice. It integrates qualitative insights from the primary art market and quantitative hedonic regression analysis from the secondary market, providing a comprehensive view of art investment behavior and price formation. These findings offer valuable guidance for investors, collectors, and policymakers navigating the Indian art market.

Looking ahead, continued interdisciplinary research—spanning economics, finance, art history, and data science—is essential to refine valuation models, improve market transparency, and adapt to evolving technologies and investor expectations. As the Indian art ecosystem matures and digitizes, future inquiry must also explore new forms of value, such as digital art, NFTs, and ESG-aligned collecting practices.

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ANNEXURE I

QUESTIONNAIRE

Dear Respondent,

You are invited to participate in this survey on examining various factors that should influence the valuation of art painting. I would be very grateful if you spare some time and thought in completing the survey questionnaire. The information provided by you will be strictly confidential and will by no means reflect the identity of the individual.

Part- I

Q1. How often do you paint?

Always	Very Often	Sometimes	Seldom	Never

Q2. How many times have you visited an art gallery in a year?

Never _____

Less than 1 _____

1 to 3 times _____

3 to 8 times _____

8 to 12 times _____

More than 12 times _____

Q3. Have you ever purchased a painting from the art museum or gallery?

Yes _____

No _____

Q4. According to you what is the most important factor on which the art valuation is done (Tick as many)?

Size _____

Theme of the Painting _____

Artist _____

Q5. Rate the reliability of the present art valuation model.

Highly Reliable	Reliable	Neutral	Not Reliable	Least Reliable

Part-II

Q6. Rate the factors on the basis of significance while valuating the piece of art?

S.No.	Reasons	Highly Significant	Significant	Neutral	Insignificant	Highly Insignificant
1	Medium of the art work					
2	Size of the Painting					
3	Subject of the Painting					
4	Aesthetic Appeal					
5	Age of the Artwork					
6	Provenance/ Source of Artwork					
7	Popularity of Artist (Frequency of paintings sold in the auctions)					
8	Cultural Value of the Painting					
9	Colour of the Painting					

Q7. Does the auction house prestige also affect the price of the painting?

Yes _____

No _____

Q8. Rank the following base of the artwork on the basis of their importance in the valuation of an art work (1 indicates most important and 7 indicates least important factor).

Factors	Rank order
1. Cardboard	_____
2. Canvas	_____
3. Sculpture	_____
4. Paper	_____
5. Wooden	_____

Q9. Rank the following medium on the basis of their importance in the valuation of an art work (1 indicates most important and 7 indicates least important factor).

Factors	Rank order
1. Oil painting	_____
2. Acrylic	_____
3. Water colour	_____
4. Ink/charcoal Drawing	_____
5. Gouache	_____
6. Mixed Media	_____
7. Pencil Drawing	_____

Part-III

Personal Information:-

Name: _____

Age:

- ☐ Less than 20 years
- ☐ 20-30 years
- ☐ More than 30 years

Gender:

- ☐ Male
- ☐ Female

Occupation

- ☐ Student
- ☐ Artist
- ☐ Art Collector
- ☐ Gallery Owner
- ☐ Art Consultant

Income per annum:

- ☐ Less than 5,00,000
- ☐ 5,00,000 to 10,00,000
- ☐ 10,00,000 to 25,00,000
- ☐ More than 25,00,000

Email Id: - _____

Phone No.:- _____

Signature: - _____