



COVID-19 Impact: A comparative analysis of social traders vs. Traditional fund managers

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Abstract

This study examines the performance and risk characteristics of social traders on the Wikifolio platform compared with traditional fund managers across three market regimes: the pre-COVID period (2018–2019), the COVID-19 crisis year (2020), and the post-COVID period (2021–2022). Using historical daily price data from 67 Wikifolios and 67 traditional investment funds, a range of performance and risk measures, including the Sharpe Ratio, Sortino Ratio, Jensen's Alpha, Beta, and Value at Risk, were analyzed. The results reveal significant differences between social traders and traditional fund managers prior to the COVID-19 crisis. During the pandemic, however, these differences diminished considerably, and no statistically significant differences were observed in the post-pandemic period. The findings suggest a gradual convergence of performance and risk characteristics between decentralized social trading and professional portfolio management under conditions of severe market stress. These results contribute to the growing literature on social trading by demonstrating that social traders can achieve outcomes comparable to professional fund managers during and after major market disruptions. The findings further indicate that social trading platforms may represent a viable complement to traditional investment products within diversified investment strategies.

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1. Introduction

The increasing prevalence of social trading platforms like Wikifolio provides an alternative avenue in the Fintech realm, offering a departure from traditional investment methods. These platforms create a unique environment where investors can not only make their own investment decisions but also benefit from the experiences and strategies of others. They represent an innovative option with the potential to complement and enrich traditional financial practices. The growing popularity of social trading is evident in the rising number of users and the increasing trading volume on these platforms.

In this context, it is crucial to closely examine the performance of social traders compared to traditional fund managers. While some studies have explored social trading dynamics, most research has focused either on social trading behavior or on the performance of social trading portfolios in isolation. Although prior studies have investigated social trading performance, limited evidence exists regarding how social traders compare with professional fund managers across different market regimes, particularly before, during, and after a major market disruption such as the COVID-19 crash. The unprecedented market turbulence of 2020 therefore provides a unique opportunity to examine whether social traders and traditional fund managers differ in their ability to navigate periods of extreme uncertainty.

This study aims to fill this gap by investigating the performance of social traders from early 2018 to late 2022. Utilizing daily closing prices, we aim to calculate various performance and risk metrics, enabling a thorough analysis of social traders' behavior. This timeframe provides a broad foundation for analyzing diverse market conditions and trends, including the impact of significant events like the COVID-19 crash on

financial markets. Through this examination, we seek to identify potential long-term trends and behavioral patterns among social traders.

To address these questions, we draw upon a variety of data sources, including historical data from Wikifolios and investment funds, while the MSCI World Index serves as a benchmark for selected performance and risk measures. These data enable us to conduct a comprehensive analysis of social traders' performance and risk profiles, facilitating meaningful comparisons.

Our research questions aim to deepen understanding of social traders' performance and provide practical insights for investors and financial institutions.

1. How does the performance of social traders compare to that of traditional fund managers?
2. Did the COVID-19 crash in 2020 significantly affect the performance of social traders?
3. What insights can be gleaned from the performance and risk profiles of social traders?

The findings of this study will not only contribute to expanding understanding of social traders' performance but also offer practical implications for investors, financial institutions, and regulatory authorities. By analyzing the performance of social traders across various market environments, we can highlight potential risks and opportunities for investors and contribute to the advancement of research in this field.

This study is significant because it provides one of the first comprehensive comparisons between social traders and traditional fund managers across different market regimes surrounding the COVID-19 crisis. Understanding whether social traders can perform competitively during periods of extreme uncertainty is relevant for investors, financial institutions, and policymakers as social trading platforms continue to gain importance in modern financial markets.

The remainder of this paper is structured as follows. Section 2 reviews the relevant literature and identifies the research gap. Section 3 describes the data and methodology. Section 4 presents and discusses the empirical results. Finally, Section 5 concludes the study, outlines practical implications, and suggests avenues for future research.

2. Literature Review

The literature review provides a comprehensive overview of prior research and scholarly work related to impact of external events such as market crashes and the topic of social trading. This section aims to establish the theoretical framework and contextual background for the current study.

2.1. Effects of External Shocks: COVID-19's Influence on Financial Markets

The emergence of the COVID-19 pandemic in late 2019 led to a global health crisis and an unprecedented economic shock. Strict lockdown measures implemented by governments worldwide to contain the spread of the virus resulted in heightened volatility and uncertainty in financial markets. Developed markets, primarily viewed as volatility transmitters, saw increased interconnectedness during the crisis, according to [Li, Zhuang, Wang, and Dong \(2021\)](#). Their study sheds light on the impact of the COVID-19 pandemic on G20 stock markets from multiple perspectives. Results suggest a significant increase in total volatility connectedness among G20 stock markets during the COVID-19 crisis, with dynamic evolution characteristics observed during different periods of the pandemic. Additionally, the study finds that developed markets are the main spillover transmitters, while emerging markets are the main spillover receivers.

[Daube \(2020\)](#) provided an initial analysis of the substantial price decline in the international financial markets since early March 2020. This is conducted based on an economic perspective, with sociological and psychological approaches also incorporated. The initial thesis posits that the economic parameters were already "toxic" at the beginning of 2020.

Herding behavior in European capital markets was significantly affected by the COVID-19 pandemic, as highlighted by [Espinosa-Méndez and Arias \(2021\)](#). Their study, analyzing data from European stock exchanges, found robust evidence of increased herding behavior during the pandemic period.

[Ftiti, Ameer, and Louhichi \(2021\)](#) shed light on the impact of non-fundamental news related to the COVID-19 pandemic on liquidity and returns volatility in financial markets. Their research, employing quantile regression on daily data, revealed that COVID-19-related news significantly affected market volatility and liquidity.

Investor imitation behavior during periods of crisis, such as the 2008 financial crisis and the recent COVID-19 pandemic, was analyzed by [Ferreruela and Mallor \(2021\)](#). Their study, using cross-sectional dispersion of returns, found varying levels of herding intensity across different crisis periods.

[Rouatbi, Demir, Kizys, and Zaremba \(2021\)](#) investigated the impact of COVID-19 vaccination programs on global equity markets. Their research, analyzing daily data from 66 countries, provided convincing evidence that vaccination efforts contributed to stabilizing global equity markets.

The COVID-19 pandemic had a profound impact on dividend payouts of publicly traded firms in the U.S., as studied by [Krieger, Mauck, and Pruitt \(2021\)](#). Their analysis revealed a significant increase in dividend cuts and omissions during the pandemic period, compared to previous quarters.

Fianto, Ridhwan, Shah, Faris, and Ruslan (2022) conducted a thematic bibliometric review of literature examining the impact of the COVID-19 crisis on global stock markets. Their review identified future research directions and managerial implications, emphasizing the crucial role of governments in managing the crisis's impact.

Goodell (2020) highlighted the significant economic and social impacts of COVID-19. This paper briefly outlined the possible impacts of COVID-19 on financial markets and institutions, either directly or indirectly, suggesting avenues for future investigation based on the characteristics of COVID-19 and its impacts on other past events.

Collectively, prior research demonstrates that the COVID-19 pandemic substantially affected financial markets through increased volatility, stronger market interconnectedness, changes in investor behavior, and heightened uncertainty. However, while these studies provide valuable insights into market-wide effects, limited attention has been paid to how different categories of portfolio managers responded to these conditions. Little is known about whether social traders were able to adapt to the crisis as effectively as professional fund managers.

2.2. Social Trading: Performance, Risk Assessment, and Long-Term Trends

Social trading platforms (STPs) provide access to an innovative type of delegated portfolio management. According to Denke (2019) STPs are becoming increasingly relevant, particularly as retail investors show reluctance to make investment decisions independently. Signal providers and receivers coexist on these platforms, categorized by certain career levels based on their track record. Despite the transparency and simplicity offered by social trading platforms, signal providers generally do not outperform mutual funds or the market.

Moreover, Dorfleitner et al. (2018) emphasize the importance of considering risk-adjusted returns when assessing signal providers' performance on social trading platforms. Their analysis reveals that incorporating the Sharpe ratio improves returns, particularly for sophisticated strategies that consider the risk of signal providers' portfolios.

Doering, Neumann, and Paul (2015) shed light on the organizational structure and empirical insights of social trading platforms, emphasizing the potential reduction of information asymmetries between signal providers and followers. Their analysis highlights the prevalence of active trading strategies among signal providers and the challenges of using traditional mean-variance analysis for performance evaluation in social trading.

Röder and Walter (2019) investigate investment flows into social trading portfolios issued as structured products. They find that investment flows primarily chase past performance, particularly for the best-performing portfolios. Additionally, the visibility of portfolios on social trading platforms and active communication with investors positively influence investment inflows.

Bankamp and Muntermann (2020) delve into the value of ranking mechanisms on social trading platforms, especially during turbulent market phases such as the COVID-19 pandemic. Their findings indicate that rankings contribute to reduced search costs for investors and protect them from extreme losses during market downturns. Additionally, changes in rankings tend to influence traders' behavior.

Pelster and Breitmayer (2019) focus on the impact of peers showing interest in investors' trading activities. Their study suggests that social traders who attract attention from peers exhibit increased trading activity and risk-taking behavior, possibly due to heightened excitement about trading.

Scheckenbach, Wimmer, and Dorfleitner (2021) explore risk-taking behavior in online trading environments with convex incentives. They observe that traders adjust their risk preferences based on their proximity to remuneration options and overall portfolio payoff. Moreover, social status indicators like rankings significantly impact traders' risk-taking behavior.

Oehler, Horn, and Wendt (2016) analyze the performance of Wikifolio certificates used in social trading. Their findings suggest that, while Wikifolios do not outperform the market on average, those with a geographical focus perform better. Additionally, the best-performing Wikifolios earn significant short-term excess returns.

Cohen (2015) examines the effectiveness of social trading and whether community recommendations can outperform the market. Despite the utilization of community knowledge and recommendations, Cohen's study reveals that social portfolios typically underperform the market, emphasizing the importance of traditional portfolio analysis and professional advice.

Glaser and Risius (2018) discuss the characteristics of social trading platforms and the influence of transparency and interaction on traders' behavior. Their analysis reveals that traders' sensitivity to behavioral biases like the disposition effect is influenced by the attention they receive from followers, suggesting a link between principal-agent theory and behavioral biases in social trading networks.

The existing literature presents mixed evidence regarding the effectiveness of social trading. While several studies report underperformance relative to traditional benchmarks and mutual funds, others highlight advantages such as transparency, collective intelligence, ranking mechanisms, and adaptability. Moreover, most studies focus either on trader behavior or on social trading performance in isolation. Comparatively little

evidence exists on how social traders perform relative to professional fund managers under different market conditions, particularly during periods of severe market stress such as the COVID-19 crisis.

2.3. Research Gap and Contribution

While previous research has extensively examined both the effects of the COVID-19 pandemic on financial markets and the characteristics of social trading platforms, several gaps remain in the literature. Existing studies on COVID-19 primarily focus on market volatility, herding behavior, liquidity, and stock market connectedness. At the same time, research on social trading has largely concentrated on trader behavior, platform characteristics, and the standalone performance of social trading portfolios.

However, limited evidence exists regarding the comparative performance of social traders and professional fund managers across different market regimes. Little is known about how these two groups performed before, during, and after a major market disruption such as the COVID-19 crash. Furthermore, prior studies rarely combine a broad set of performance and risk measures to evaluate both groups simultaneously.

This study seeks to address these gaps by comparing 67 Wikifolios and 67 traditional investment funds over the period from 2018 to 2022. By examining the pre-crisis period (2018–2019), the crisis year (2020), and the post-crisis period (2021–2022), the study provides a comprehensive assessment of performance and risk dynamics under different market conditions. In addition, the analysis incorporates multiple risk-adjusted performance measures and risk indicators, enabling a detailed comparison between social traders and professional fund managers.

The study contributes to the literature by extending existing research beyond the isolated analysis of social trading and by providing empirical evidence on the relative resilience and adaptability of social traders during a major global market shock. The findings offer valuable insights for investors, financial institutions, and researchers interested in the evolving role of social trading within modern financial markets.

Beyond providing empirical evidence, this study contributes to the growing literature on social trading by examining whether decentralized, crowd-based investment decision-making can remain competitive with professional portfolio management during periods of systemic market stress.

3. Data and Methodology

3.1. Data Collection, Preparation, Timeframe, and Ethical Considerations

The study is based on historical daily closing prices from 67 Wikifolios and 67 investment funds. Among these, 67 Wikifolio traders were selected based on their participation in interviews for this study conducted by the author, with their daily closing prices obtained from the Wikifolio platform spanning from early 2018 to the end of 2022. The sample was restricted to traders who participated in the interview study because complete historical performance data and additional background information were available for these traders. While this approach may limit generalizability, it ensures consistency and data completeness across the sample. Additionally, 67 funds were chosen from those listed as "Top-Seller Funds by Number of Investors" on the [fondsdiscount.de](https://www.fondsdiscount.de) website.

The collected data, including daily closing prices and fund-related information, were carefully processed and cleaned to ensure data consistency and reliability. This involved handling missing data, adjusting date formats, and eliminating potential disruptions in the price data.

The study examined the period from early 2018 to the end of 2022, with a specific focus on the year 2020, characterized by the COVID-19 Crash. By considering the years before and after 2020, a comprehensive understanding of long-term trends and patterns in performance was developed.

3.2. Analytical Methods: Performance Measures and Risk Measures

The analysis of investment performance encompassed a comprehensive set of performance metrics to assess both returns and risk. Daily logarithmic returns were calculated from the historical closing prices of Wikifolios and funds. These return series served as the basis for the calculation of all performance and risk measures presented in [Tables 1](#) and [2](#).

Performance measures: To evaluate the investment performance of the Social Traders and Fund Managers, several performance measures were calculated:

Table 1. Performance measures.

Variable	Sign	Reference
Mean	(Mean)	Witte and Witte (2017)
Sharpe Ratio	(SR)	Sharpe (1966)
Sortino Ratio	(SRo)	Sortino and Price (1994)
Treynor Ratio	(TR)	Treynor (2012)
Tracking Error	(TE)	Sharpe (1992)
Information Ratio	(IR)	Goodwin (1998)
Jensen's Alpha	(JA)	Jensen (1968)
Calmar Ratio	(CaR)	Young (1991)

Risk measures: In addition to performance measures, various risk measures were calculated to manage and assess the risk associated with the portfolios:

Table 2. Risk measures.

Variable	Sign	Reference
Standard Deviation	(SD)	Witte and Witte (2017)
Beta	(β)	Markowitz (1952)
Maximum Drawdown	(MDD)	Magdon-Ismail and Atiya (2004)
Value at Risk	(VaR)	Jorion (2007)

These performance and risk measures were computed using mathematical models and statistical methods to provide a comprehensive understanding of portfolio performance and risk profiles.

3.3. Statistical Analysis and Normality Assessment

Various statistical analyses were conducted to compare two groups (either paired or unpaired). In the case of unpaired groups, a significant difference was observed, while paired groups involved observations before and after an intervention. The Shapiro-Wilk test was applied to assess the assumption of normal distribution in the samples (Shapiro & Wilk, 1965).

If the p-value from the Shapiro-Wilk test exceeded 0.05, a t-test was performed to analyze the difference between the means of the two groups, as described by Student (1908).

If the data were not normally distributed or if the p-values from the Shapiro-Wilk test were below 0.05, non-parametric tests were considered. The Mann-Whitney U test was conducted for unpaired groups, and the Wilcoxon signed-rank test was utilized for paired groups to determine differences between them.

The assumption of normal distribution was checked using the Shapiro-Wilk test. If this assumption was violated, alternative non-parametric tests were applied, as described by the Wilcoxon signed-rank test (Wilcoxon (1945) for paired groups and the Mann-Whitney U test (Mann & Whitney, 1947) for unpaired groups.

Additionally, it was ensured that the sample size met the recommended criteria for the Central Limit Theorem. According to this theorem, for the distribution of sample means to approach a normal distribution, the sample size should ideally be greater than 30 (Witte & Witte, 2017).

The analysis revealed that a small p-value (typically < 0.05) indicates a significant difference between the groups.

4. Analysis of Results and Findings

In this chapter, the results of our research, focusing on the performance of social traders on platforms like Wikifolio compared to traditional fund managers are presented and discussed. The analysis encompasses the years 2018/19, 2020, and 2021/22, allowing us to explore performance trends and variations over time.

4.1. Summaries for Wikifolios

The following tables present performance and risk measures for Wikifolios spanning the years 2018 to 2022. These tables offer a comprehensive overview of the evolution of these financial instruments over several years. Analyzing these metrics provides valuable insights into the performance and risk profiles of Wikifolios. The tables are structured as follows: Table 3 showcases performance measures for Wikifolios in 2018/2019, followed by corresponding risk measures in Table 4. Performance measures for the year 2020 are detailed in Table 5, with associated risk measures in Table 6. Table 7 presents performance measures for Wikifolios in 2021/2022, followed by risk measures in Table 8.

Table 3. Performance measures for Wikifolios in 2018/2019.

Statistic	Mean	SR	SRo	TR	TE	IR	JA	CaR
Min.	-0.0017826	-0.14757	-0.1675	-0.002234	0.00857	-0.09053	-0.0013714	-0.0005390
1st Qu.	-0.0005069	-0.06330	-0.0741	-0.000848	0.01062	-0.00593	-0.0002344	-0.0001413
Median	-0.0002822	-0.03246	-0.0377	-0.000413	0.01178	0.01383	0.0000228	-0.0000613
Mean	-0.0002861	-0.03221	-0.0342	-0.000287	0.01281	0.01280	0.0000258	-0.0000603
3rd Qu.	-0.0000445	-0.00378	-0.0048	-0.000065	0.01451	0.03329	0.0002074	-0.0000012
Max.	0.0011174	0.13787	0.3325	0.009818	0.02674	0.10251	0.0014171	0.0008916

Table 4. Risk measures for Wikifolios in 2018/2019.

Statistic	SD	β	MDD	VaR
Min.	0.00216	-0.158	-1.00	-0.03328
1st Qu.	0.00658	0.548	2.71	-0.02184
Median	0.00822	0.670	3.21	-0.01404
Mean	0.00943	0.718	3.60	-0.01613
3rd Qu.	0.01249	0.940	3.95	-0.01100
Max.	0.02537	1.587	10.70	-0.00179

Table 5. Performance measures for Wikifolios in 2020.

Statistic	Mean	SR	SRo	TR	TE	IR	JA	CaR
Min.	-0.001421	-0.10288	-0.09975	-0.00989	0.0160	-0.07973	-0.001613	-0.0002751
1st Qu.	0.000085	0.00524	0.00573	0.00011	0.0263	-0.02331	-0.000267	0.0000234
Median	0.000607	0.03449	0.04143	0.00098	0.0278	-0.00458	0.000161	0.0001510
Mean	0.000724	0.03928	0.05186	0.00215	0.0288	-0.00270	0.000353	0.0002131
3rd Qu.	0.001150	0.06961	0.08496	0.00222	0.0305	0.01425	0.000704	0.0002814
Max.	0.003535	0.16076	0.26582	0.07083	0.0640	0.07307	0.003182	0.0014222

Table 6. Risk measures for Wikifolios in 2020.

Statistic	SD	β	MDD	VaR
Min.	0.00159	-0.954	1.90	-0.05534
1st Qu.	0.01288	0.357	3.10	-0.02823
Median	0.01667	0.606	3.53	-0.02247
Mean	0.01712	0.502	4.48	-0.02355
3rd Qu.	0.01955	0.730	4.19	-0.01713
Max.	0.05690	0.980	41.74	-0.00018

Table 7. Performance measures for Wikifolios in 2021/2022.

Statistic	Mean	SR	SRo	TR	TE	IR	JA	CaR
Min.	-0.001131	-0.06535	-0.08250	-0.003431	0.0118	-0.04201	-0.0011384	-0.0006952
1st Qu.	-0.000258	-0.02008	-0.02604	-0.000484	0.0141	-0.01470	-0.0002609	-0.0000987
Median	-0.000105	-0.01144	-0.01376	-0.000208	0.0161	-0.00779	-0.0001083	-0.0000209
Mean	-0.000070	-0.00345	-0.00447	0.000026	0.0172	-0.00361	-0.0000741	-0.0000319
3rd Qu.	0.000127	0.01288	0.01648	0.000227	0.0190	0.00762	0.0001232	0.0000442
Max.	0.001327	0.05355	0.07623	0.008326	0.0306	0.04315	0.0013327	0.0005202

Table 8. Risk measures for Wikifolios in 2021/2022.

Statistic	SD	β	MDD	VaR
Min.	0.00242	-0.706	1.47	-0.03813
1st Qu.	0.00821	0.408	2.24	-0.02663
Median	0.01132	0.545	2.62	-0.01785
Mean	0.01219	0.553	3.21	-0.02002
3rd Qu.	0.01540	0.746	3.17	-0.01307
Max.	0.02479	1.260	17.31	-0.00017

4.2. Summaries for Funds

The ensuing tables provide an in-depth analysis of performance and risk measures for funds across the years 2018 to 2022. These tables offer valuable insights into the dynamics of fund performance and risk management over a multi-year period. Understanding these metrics is essential to evaluate the efficacy of different funds and construct well-balanced portfolios. The tables are organized as follows: [Table 9](#) showcases performance measures for funds in 2018/2019, accompanied by corresponding risk measures in [Table 10](#). Performance measures for the year 2020 are delineated in [Table 11](#) with associated risk measures in [Table 12](#).

Furthermore, Table 13 presents performance measures for funds in 2021/2022, followed by risk measures in Table 14.

Table 9. Performance measures for funds in 2018/2019.

Statistic	Mean	SR	SRo	TR	TE	IR	JA	CaR
Min.	-0.004477	-0.2048	-0.3115	-0.007879	0.00848	-0.1770	-0.003769	-0.0012627
1st Qu.	-0.001218	-0.0803	-0.1143	-0.002042	0.01376	-0.0455	-0.000992	-0.0004147
Median	-0.000689	-0.0444	-0.0652	-0.001117	0.01664	-0.0144	-0.000457	-0.0001399
Mean	-0.000789	-0.0501	-0.0692	-0.001334	0.01749	-0.0167	-0.000511	-0.0001328
3rd Qu.	-0.000208	-0.0216	-0.0314	-0.000373	0.02110	0.0175	0.000035	0.0000156
Max.	0.002212	0.0985	0.1635	0.005498	0.03084	0.1158	0.002703	0.0018127

Table 10. Risk measures for funds in 2018/2019.

Statistic	SD	β	MDD	VaR
Min.	0.00352	-0.176	-1.00	-0.05949
1st Qu.	0.01213	0.425	2.35	-0.03354
Median	0.01482	0.660	2.80	-0.02580
Mean	0.01544	0.641	2.77	-0.02675
3rd Qu.	0.01968	0.820	3.44	-0.02000
Max.	0.03032	1.784	7.77	-0.00666

Table 11. Performance measures for funds in 2020.

Statistic	Mean	SR	SRo	TR	TE	IR	JA	CaR
Min.	-0.001338	-0.0504	-0.0607	-0.00312	0.0176	-0.05897	-0.001723	-0.0003596
1st Qu.	0.000264	0.0170	0.0208	0.00063	0.0240	-0.02005	-0.000063	0.0000452
Median	0.000741	0.0345	0.0416	0.00133	0.0300	0.00008	0.000310	0.0001543
Mean	0.000799	0.0371	0.0462	0.00217	0.0298	0.00217	0.000408	0.0002239
3rd Qu.	0.001262	0.0546	0.0638	0.00242	0.0341	0.01713	0.000857	0.0003230
Max.	0.003849	0.1731	0.2162	0.04034	0.0517	0.14366	0.003345	0.0014640

Table 12. Risk measures for funds in 2020.

Statistic	SD	β	MDD	VaR
Min.	0.00577	-0.0755	2.19	-0.06085
1st Qu.	0.01834	0.4212	3.42	-0.03993
Median	0.02202	0.5330	4.19	-0.03353
Mean	0.02173	0.5298	4.42	-0.03331
3rd Qu.	0.02559	0.6747	4.91	-0.02819
Max.	0.04295	1.0351	11.15	-0.00943

Table 13. Performance measures for funds in 2021/2022.

Statistic	Mean	SR	SRo	TR	TE	IR	JA	CaR
Min.	-0.0014171	-0.06481	-0.09640	-0.009514	0.0122	-0.06920	-0.0014222	-0.0004494
1st Qu.	-0.0002976	-0.03028	-0.04086	-0.000625	0.0145	-0.02056	-0.0003021	-0.0001166
Median	-0.0000687	-0.00496	-0.00687	-0.000093	0.0163	-0.00400	-0.0000717	-0.0000193
Mean	-0.0001000	-0.00533	-0.00611	-0.000138	0.0168	-0.00536	-0.0001041	-0.0000181
3rd Qu.	0.0001978	0.01605	0.02409	0.000334	0.0184	0.01108	0.0001927	0.0000811
Max.	0.0007383	0.06190	0.08942	0.010681	0.0332	0.03856	0.0007332	0.0004076

Table 14. Risk measures for funds in 2021/2022.

Statistic	SD	β	MDD	VaR
Min.	0.00422	-0.0057	1.66	-0.05255
1st Qu.	0.00995	0.3971	2.40	-0.02593
Median	0.01264	0.6016	2.61	-0.02184
Mean	0.01275	0.5696	2.96	-0.02136
3rd Qu.	0.01501	0.7243	3.03	-0.01672
Max.	0.03100	1.0982	17.68	-0.00752

4.3. Performance Metrics Over the Years

This section offers a comprehensive visual analysis of performance metrics over the years for both funds and Wikifolios, utilizing boxplots to showcase their respective characteristics. Figures 1-8 present key

performance metrics for both investment vehicles side by side, enabling a direct comparison across various time frames.

Within each boxplot, essential performance distribution features are encapsulated. The central line denotes the median, indicating the data's central tendency, while the box illustrates the interquartile range (IQR), representing data variability. Whiskers extend from the box to indicate minimum and maximum values within 1.5 times the IQR, with outliers depicted as individual points beyond the whiskers.

By scrutinizing these boxplots, differences in performance metrics' central tendency, variability, and distribution between funds and Wikifolios across the analyzed time periods. This comparative approach enhances understanding of their relative performance dynamics.

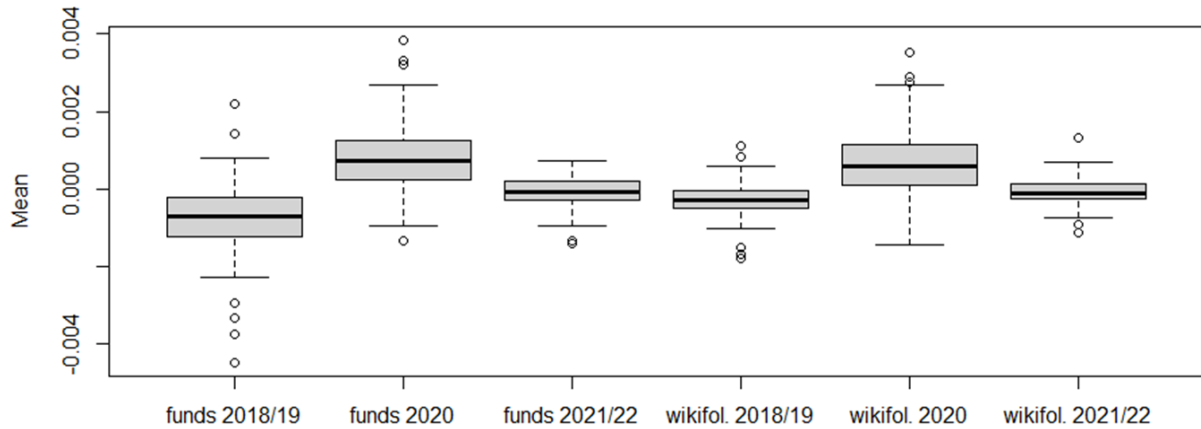


Figure 1. Mean.

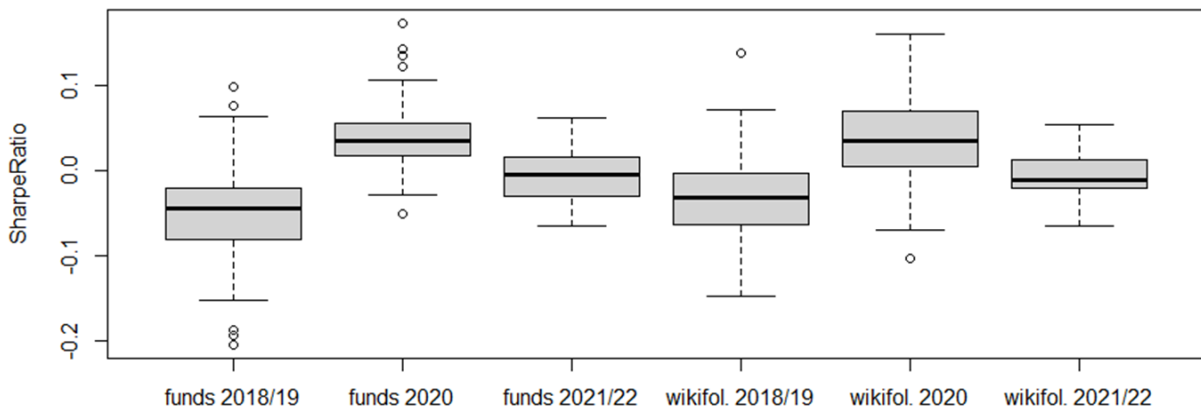


Figure 2. Sharpe Ratio.

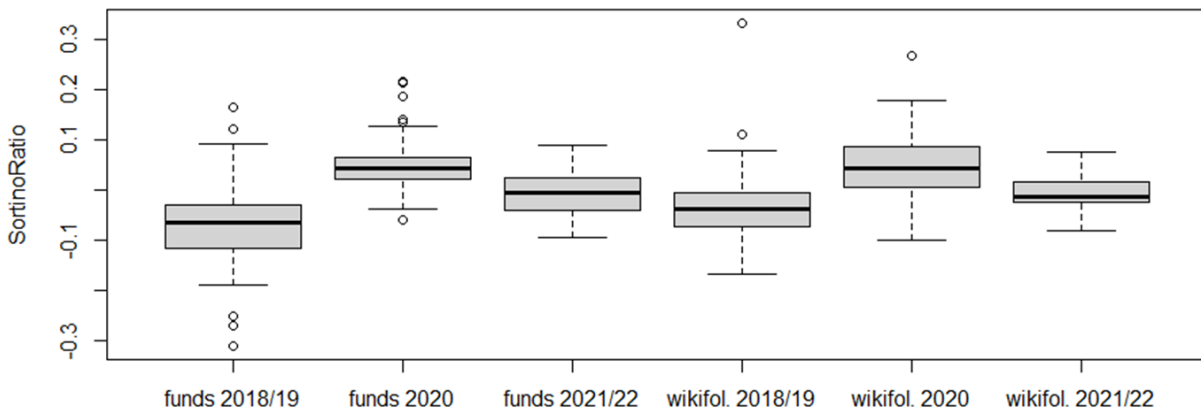


Figure 3. Sortino Ratio.

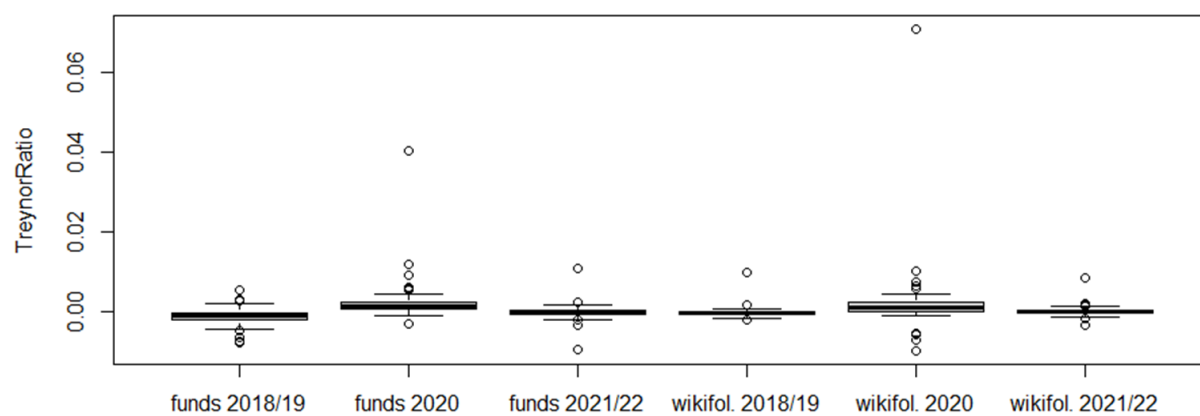


Figure 4. Treynor Ratio.

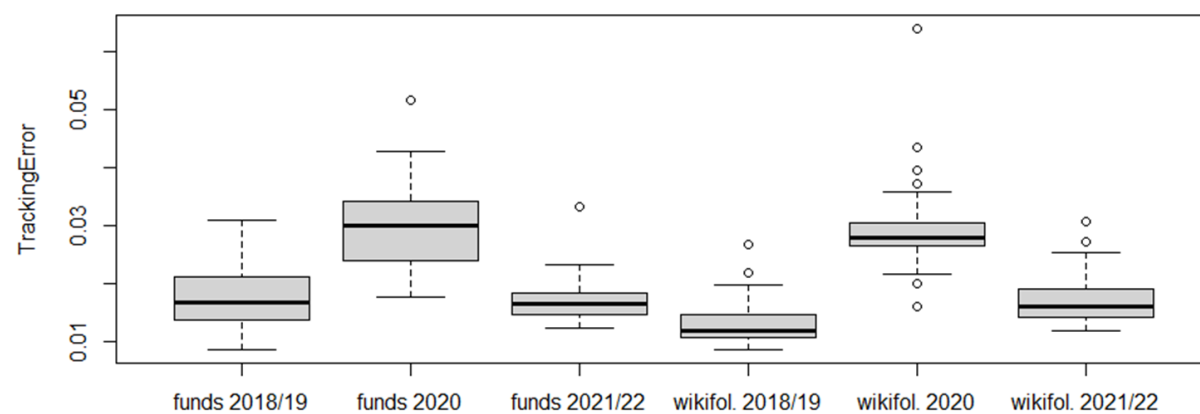


Figure 5. Tracking Error.

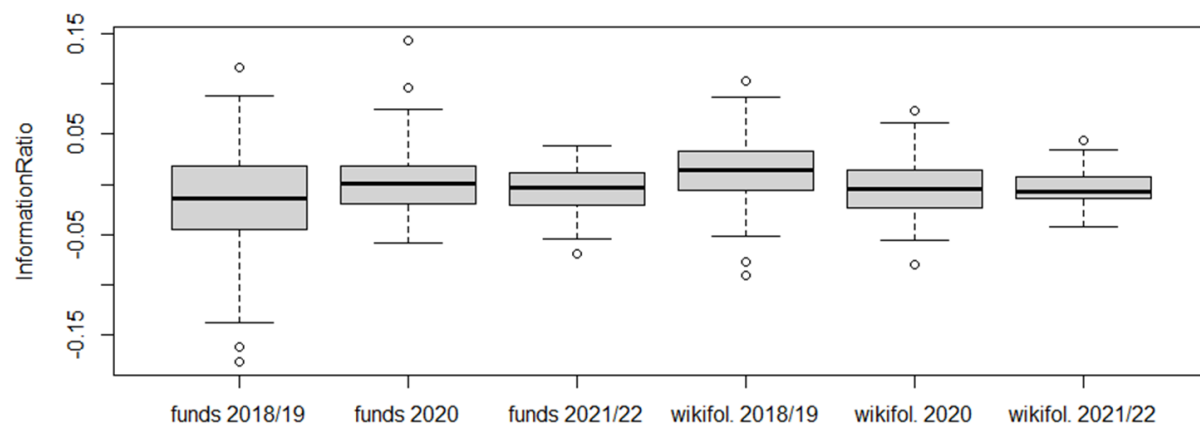


Figure 6. Information Ratio.

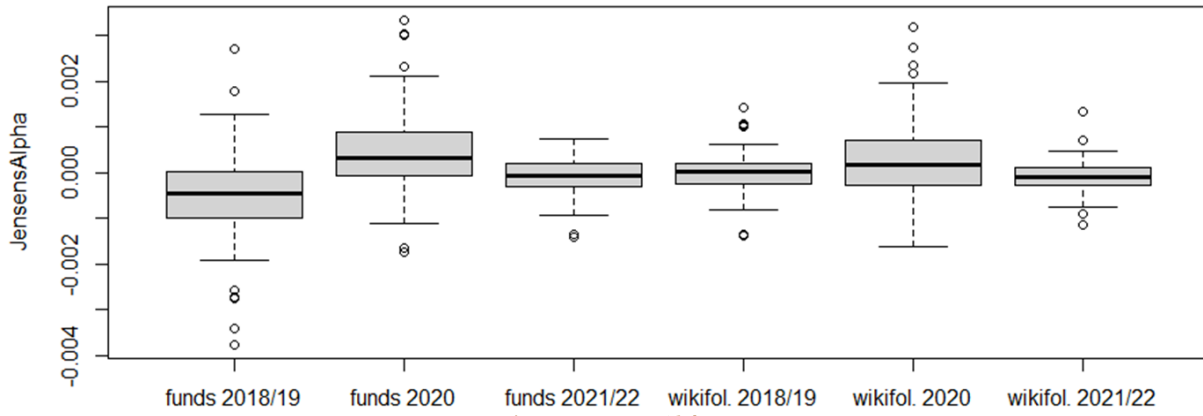


Figure 7. Jensen's Alpha.

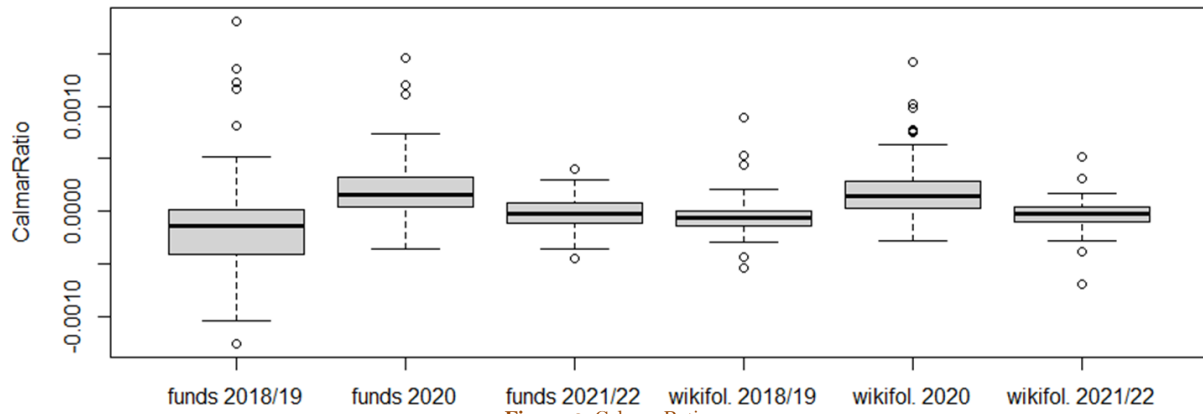


Figure 8. Calmar Ratio.

4.4. Risk Metrics Over the Years

This section offers a detailed exploration of risk metrics over the years, employing boxplots as graphical representations. Figures 9-12 present key risk metrics, providing insights into the evolving risk profiles of both funds and Wikifolios across various time periods.

Each figure juxtaposes the risk characteristics of funds and Wikifolios, enabling to compare their risk dynamics effectively. These boxplots encapsulate essential risk metrics, including standard deviation, beta, maximal drawdown, and historical Value at Risk (VaR), offering a comprehensive view of risk exposure.

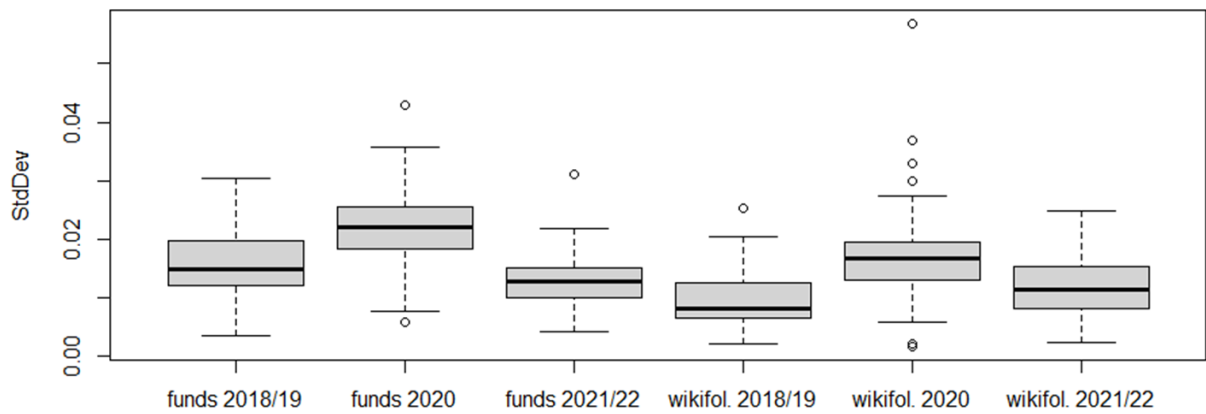


Figure 9. Standard Deviation.

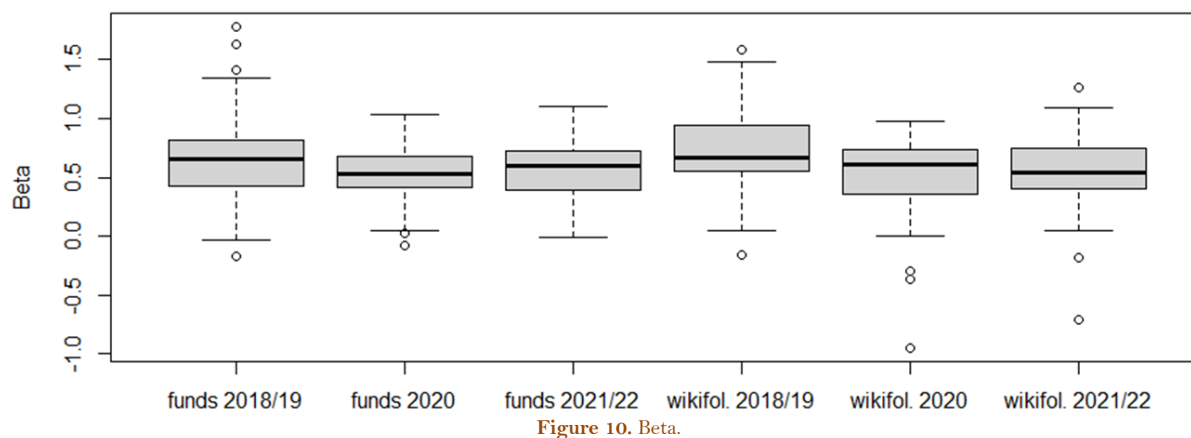


Figure 10. Beta.

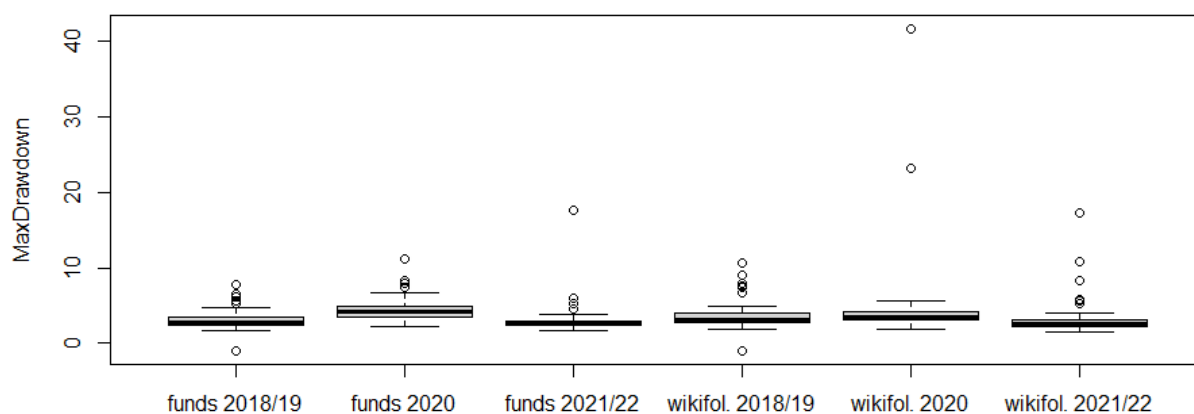


Figure 11. Maximal Drawdown.

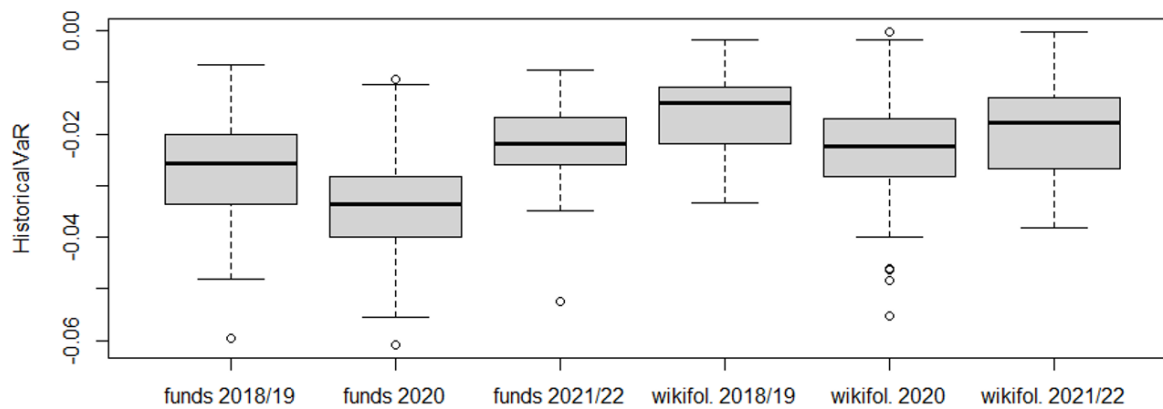


Figure 12. Historical VaR.

4.5. Discussion of Results

The nuanced analysis presented in [Tables 15](#) and [16](#) provides a comprehensive overview of the performance and risk differentiation between Wikifolios and funds over several periods, with a particular focus on statistical significance as indicated by p-values.

Table 15. P-values comparison for different measures across years between funds and Wikifolios.

Measures/Year	2018/19	2020	2021/22
Mean	0.0002	0.4989	0.9889
SD	0.0000	0.0000	0.2167
SR	0.0439	0.6020	0.6956
SRo	0.0057	0.7078	0.8012
β	0.1889	0.5693	0.6844
TR	0.0001	0.2592	0.8012
TE	0.0000	0.1131	0.9478
IR	0.0001	0.4964	0.6209
JA	0.0000	0.5167	0.9984
MDD	0.0044	0.0021	0.9415
VaR	0.0000	0.0000	0.1407
CaR	0.0097	0.6670	0.7859

Table 15 reveals a notable trend in the year 2021/22, where all p-values exceed the 0.05 threshold, suggesting no statistically significant difference in the evaluated measures between Wikifolios and funds. This departure from previous years, where significant differences were more common, indicates a potential convergence in performance outcomes between these two investment vehicles. Several factors could contribute to this trend, including market stabilization post-2020, a uniform response to global economic conditions, or similar adaptation strategies among traders and fund managers.

Table 16. Comparison of p-values for measurement data between the periods prior to 2020 (2018-2019) and post-2020 (2021-2022) for Wikifolios and funds.

Measurement	Wikifolios P-Values	Funds P-Values
Mean	0.0024	0.000
SD	0.0000	0.000
SR	0.0002	0.000
SRo	0.0003	0.000
β	0.0001	0.0501
TR	0.0133	0.000
TE	0.0000	0.1662
IR	0.0018	0.1852
JA	0.2491	0.0011
MDD	0.0016	0.5906
VaR	0.0000	0.000
CaR	0.0640	0.0043

Conversely, Table 16 underscores a distinct advantage for Wikifolios in the periods compared, with more measures showing p-values below 0.05, especially prior to 2020. This observation suggests that Wikifolios, perhaps due to their agility and the innovative strategies of social traders, were better positioned to capitalize on market conditions or adapt to changes more swiftly than traditional funds. This adaptability could reflect the unique characteristics of social trading platforms, which may enable more responsive and personalized investment decisions.

The superior performance of Wikifolios prior to 2020 is broadly consistent with Oehler et al. (2016) who reported significant short-term excess returns among top-performing Wikifolios. The findings further support the argument of Bankamp and Muntermann (2020) that platform-specific mechanisms may facilitate adaptation during periods of uncertainty. However, the absence of significant differences in 2021/22 contrasts with expectations derived from studies emphasizing persistent advantages of social trading. One possible explanation is that both social traders and professional fund managers adjusted their investment strategies following the COVID-19 crisis, leading to increasingly similar performance and risk characteristics.

The convergence observed in 2021/22 may indicate that periods of severe market disruption reduce structural differences between decentralized and professional portfolio management. While social traders may initially benefit from greater flexibility and faster decision-making, prolonged market uncertainty appears to encourage similar adaptation mechanisms across investor groups. This finding challenges the assumption that professional fund managers consistently maintain a measurable performance advantage over alternative forms of portfolio management.

These findings highlight the evolving dynamics of investment performance, emphasizing the impact of external market forces and the potential of new trading platforms to challenge traditional investment paradigms. For investors, this underscores the importance of diversification and the need to consider a range of investment vehicles, including innovative platforms like Wikifolios, in their portfolios.

5. Conclusions and Recommendations

This study examined the performance and risk characteristics of Wikifolios and traditional investment funds across three distinct market periods: the pre-COVID period (2018–2019), the COVID-19 crisis year (2020), and the post-crisis period (2021–2022). The most important finding is the gradual convergence of performance and risk characteristics between social traders and professional fund managers during and after the COVID-19 crisis. While significant differences between both groups were observed before the pandemic, these differences diminished during 2020 and disappeared entirely in the post-pandemic period. The convergence observed in 2021/22 suggests that periods of severe market disruption may reduce structural differences between decentralized and professional portfolio management, ultimately encouraging similar adaptation mechanisms and leading to increasingly comparable investment outcomes across investor groups.

Prior to 2020, Wikifolios demonstrated statistically significant advantages across several performance and risk-adjusted measures, indicating that social traders may have benefited from greater flexibility and responsiveness to changing market conditions. However, the absence of significant differences in 2021–2022 suggests that professional fund managers and social traders ultimately achieved comparable outcomes in terms of both performance and risk. These findings challenge the assumption that professional portfolio management necessarily maintains a persistent advantage over alternative forms of investment decision-making. For investors, the results indicate that social trading platforms may represent a viable complement to traditional investment products within a diversified portfolio strategy.

Future research could extend this analysis by incorporating additional social trading platforms, longer observation periods, and other market disruptions. Furthermore, investigating behavioral factors, decision-making processes, and the role of emerging technologies such as algorithmic trading may provide deeper insights into the evolving relationship between social trading and professional fund management.

5.1. Limitations and Future Work

This study is subject to several limitations. First, the analysis focuses exclusively on Wikifolio and therefore may not be fully representative of other social trading platforms. Second, the sample includes only Wikifolios whose traders participated in interviews, which may introduce selection bias. Third, the observation period is limited to the years surrounding the COVID-19 crisis. Furthermore, the selected funds represent popular investment products rather than a random sample of the broader fund universe. Consequently, the findings should be interpreted as a comparison between successful and widely adopted investment vehicles rather than between all available funds and social trading portfolios. Future research could examine additional social trading platforms, longer time horizons, and other market disruptions to assess the robustness of the findings.

References

- Bankamp, S., & Muntermann, J. (2020). *Portfolio rankings on social trading platforms in uncertain times*. In B. Clapham & J.-A. Koch (Eds.), *Enterprise applications, markets and services in the finance industry*. Cham, Switzerland: Springer International Publishing.
- Cohen, G. (2015). Does social trading works? *International Research*, 141, 101–107.
- Daube, C. H. (2020). *The corona virus stock exchange crash*. Retrieved from Working Paper Kiel, Hamburg: ZBW – Leibniz Information Centre for Economics.
- Deneke, A. (2019). Social trading at a glance—A performance analysis of signal providers. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3410534>
- Doering, P., Neumann, S., & Paul, S. (2015). *A primer on social trading networks—institutional aspects and empirical evidence*. Paper presented at the EFMA Annual Meetings.
- Dorfleitner, G., Fischer, L., Lung, C., Willmertinger, P., Stang, N., & Dietrich, N. (2018). To follow or not to follow—An empirical analysis of the returns of actors on social trading platforms. *The Quarterly Review of Economics and Finance*, 70, 160–171. <https://doi.org/10.1016/j.qref.2018.04.009>
- Espinosa-Méndez, C., & Arias, J. (2021). COVID-19 effect on herding behaviour in European capital markets. *Finance Research Letters*, 38, 101787. <https://doi.org/10.1016/j.frl.2020.101787>
- Ferreruela, S., & Mallor, T. (2021). Herding in the bad times: The 2008 and COVID-19 crises. *The North American Journal of Economics and Finance*, 58, 101531. <https://doi.org/10.1016/j.najef.2021.101531>
- Fianto, B. A., Ridhwan, M. M., Shah, S. A. A., Faris, M., & Ruslan, R. A. H. M. (2022). Response of financial markets to COVID-19 pandemic: A review of literature on stock markets. *Emerging Science Journal*, 7, 1–26. <https://doi.org/10.28991/ESJ-2023-SPER-03>
- Ftiti, Z., Ameur, H. B., & Louhichi, W. (2021). Does non-fundamental news related to COVID-19 matter for stock returns? Evidence from Shanghai stock market. *Economic Modelling*, 99, 105484. <https://doi.org/10.1016/j.econmod.2021.03.003>
- Glaser, F., & Risius, M. (2018). Effects of transparency: Analyzing social biases on trader performance in social trading. *Journal of Information Technology*, 33(1), 19–30. <https://doi.org/10.1057/s41265-016-0028-0>
- Goodell, J. W. (2020). COVID-19 and finance: Agendas for future research. *Finance Research Letters*, 35, 101512. <https://doi.org/10.1016/j.frl.2020.101512>
- Goodwin, T. H. (1998). The information ratio. *Financial Analysts Journal*, 54(4), 34–43.
- Jensen, M. C. (1968). The performance of mutual funds in the period 1945–1964. *The Journal of Finance*, 23(2), 389–416. <https://doi.org/10.2307/2325404>

- Jorion, P. (2007). *Value at risk: The new benchmark for managing financial risk*. New York: McGraw-Hill.
- Krieger, K., Mauck, N., & Pruitt, S. W. (2021). The impact of the COVID-19 pandemic on dividends. *Finance Research Letters*, 42, 101910. <https://doi.org/10.1016/j.frl.2020.101910>
- Li, Y., Zhuang, X., Wang, J., & Dong, Z. (2021). Analysis of the impact of COVID-19 pandemic on G20 stock markets. *The North American Journal of Economics and Finance*, 58, 101530. <https://doi.org/10.1016/j.najef.2021.101530>
- Magdon-Ismael, M., & Atiya, A. F. (2004). Maximum drawdown. *Risk Magazine*, 17(10), 99-102.
- Mann, H. B., & Whitney, D. R. (1947). On a test of whether one of two random variables is stochastically larger than the other. *The Annals of Mathematical Statistics*, 18(1), 50-60.
- Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, 7(1), 77-91. <https://doi.org/10.2307/2975974>
- Oehler, A., Horn, M., & Wendt, S. (2016). Benefits from social trading? Empirical evidence for certificates on wikifolios. *International Review of Financial Analysis*, 46, 202-210. <https://doi.org/10.1016/j.irfa.2016.05.007>
- Pelster, M., & Breitmayer, B. (2019). Attracting attention from peers: Excitement in social trading. *Journal of Economic Behavior & Organization*, 161, 158-179. <https://doi.org/10.1016/j.jebo.2019.03.010>
- Röder, F., & Walter, A. (2019). What drives investment flows into social trading portfolios? *Journal of Financial Research*, 42(2), 383-411. <https://doi.org/10.1111/jfir.12174>
- Rouatbi, W., Demir, E., Kizys, R., & Zaremba, A. (2021). Immunizing markets against the pandemic: COVID-19 vaccinations and stock volatility around the world. *International Review of Financial Analysis*, 77, 101819. <https://doi.org/10.1016/j.irfa.2021.101819>
- Scheckenbach, I., Wimmer, M., & Dorfleitner, G. (2021). The higher you fly, the harder you try not to fall: An analysis of the risk taking behavior in social trading. *The Quarterly Review of Economics and Finance*, 82, 239-259. <https://doi.org/10.1016/j.qref.2021.09.003>
- Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, 52(3-4), 591-611. <https://doi.org/10.1093/biomet/52.3-4.591>
- Sharpe, W. F. (1966). Mutual fund performance. *The Journal of Business*, 39(1), 119-138.
- Sharpe, W. F. (1992). Asset allocation: Management style and performance measurement. *Journal of portfolio Management*, 18(2), 7-19. <https://doi.org/10.3905/jpm.1992.409394>
- Sortino, F. A., & Price, L. N. (1994). Performance measurement in a downside risk framework. *The Journal of Investing*, 3(3), 59-64.
- Student. (1908). The probable error of a mean. *Biometrika*, 6(1), 1-25. <https://doi.org/10.2307/2331554>
- Treynor, J. L. (2012). *How to rate management of investment funds in treynor on institutional investing*. West Sussex, UK: John Wiley & Sons, Ltd.
- Wilcoxon, F. (1945). Individual comparisons by ranking methods. *Biometrics Bulletin*, 1(6), 80-83. <https://doi.org/10.2307/3001968>
- Witte, R. S., & Witte, J. S. (2017). *Statistics*. Hoboken, NJ: John Wiley & Sons.
- Young, T. W. (1991). Calmar ratio: A smoother tool. *Futures*, 20(1), 40.