A Work Project presented as part of the requirements for the Award of a Master Degree in Finance from the NOVA – School of Business and Economics.

"CAN USERS ON SOCIAL TRADING PLATFORMS CHOOSE TRDAERS WITH MINIMAL DISPOSITION BIAS? AN ANALYSIS OF WIKIFOLIO."

ANNA NEUBAUER N° 60194

Work project carried out under the supervision of:

Professor Melissa Prado

17-12-2024

ABSTRACT

This thesis explores the area of behavioral finance and examines the relationship between social metrics and a reduced disposition effect (DE) on the social trading platform *Wikifolio*. The study leverages datasets of trading activity from 2023 and uses linear regression to analyze how realized profits interact with social metrics. The results show that more followers and better rankings, as forms of active attention and social validation, play a crucial role in mitigating DE. In contrast, higher AUM and page visits appear to be influenced by external factors unrelated to dispositional tendencies. Moreover, the study confirms the crucial role of transparency in rational decision-making, as increased visibility across different wikifolio phases gradually reduces DE. These findings contribute to understanding how social trading dynamics and the phenomenon of 'wisdom of crowds' affect behavioural biases in financial markets.

Keywords: *Behavioral Finance, Social Metrics, Disposition Effect, Social Trading Platforms, Wikifolio, Wisdom of the Crowd*

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209).

I. INTRODUCTION

The disposition effect (DE) is a behavioral bias, describing the irrational tendency of traders to sell profitable investments too early while holding on to loss-making ones (Shefrin and Statman 1987). With the emergence of financial innovations like social trading, the study of DE has gained renewed importance (Gemayel and Preda 2018). Social Trading Platforms (STPs) combine financial trading and social media features, creating a transparent and interactive trading environment. In this setting, traders operate under constant real-time scrutiny, where poor performance can immediately harm their reputation as credible traders on the platform. Understanding how these social factors induced by the nature of STPs interact with DE is critical to identifying the behavioral drivers of traders.

Despite significant research on STPs, findings on the relationship between transparency and DE are inconsistent. On platforms like Zulutrade, eToro and MyForexBook, transparency appears to increase dispositional behavior, possibly due to heightened self-consciousness or pressure to conform (Glaser and Risius 2018; Heimer 2016; Hofman and Pelster 2018). In contrast, the opposite effect appears to apply on the *Wikifolio* platform, where greater public scrutiny correlates with a reduction in DE (Lukas and Eshraghi 2017). This discrepancy makes it clear that further research is needed to investigate the underlying mechanisms and analyze platform-specific factors in more detail.

This thesis uses data from *Wikifolio*, a leading STP characterized by its unique transparency features. The aim is to investigate whether social metrics, a term used to describe the specific social aspects of *Wikfolio* chosen for this work, can act as corrective mechanisms by encouraging more rational trading behaviour and ultimately reducing DE. This study specifically focusses on page visits, follower counts, rankings, and AUM to reflect different states of attention and social validation. While prior studies often relied on a single metric, such as followers or

AUM, this thesis tries to adopt a more comprehensive approach by incorporating multiple platform-specific factors.

By examining the relationship between transparency attention, social validation, and DE, this research contributes to the field of behavioral finance, offering new insights into how crowd dynamics alter trading decisions in digital financial environments. This study also addresses a critical gap in the literature by providing a detailed analysis of *Wikifolio's* specific mechanisms, advancing the understanding of STPs and their influence on trader behavior.

II. THE DISPOSITION EFFECT

The DE is a behavioral bias characterised by the tendency of investors to sell winning investments prematurely while holding on to loss-making investments for too long. The DE was first identified by Shefrin and Statman (1985) and can be derived from aspects of Prospect Theory, which explains that individuals give more weight to losses than gains, leading them to avoid realising losses and sell gains early (Kahneman and Tversky 1979).

Several theories attempt to explain the psychological and situational factors behind the DE, including mental accounting (Thaler 1999), realization preference (Barberis and Xiong 2012) and cognitive dissonance (Barber and Odean 2001) and overconfidence (Deaves, Lüders and Luo 2009). Extensive research has confirmed the presence of DE in various asset classes, including equities (Odean 1998), commodities (Locke and Mann 2005) and foreign exchange (Glaser and Weber 2007). These studies also highlight demographic and situational factors that alter DE, such as gender, age and market conditions, with increased volatility often increasing loss aversion (Breitmayer, Hasso and Pelster 2019; Brown, Dacin, Pratt and Whetten 2006; Coval and Shumway 2005; Da costa et al. 2012; Dhar and Zhu 2006). Understanding the impact of the DE is critical as this type of behavioral bias delays necessary price adjustments to new

information (Frazzini 2006), affects returns and ultimately impacts investor wealth (Seru, Shumway and Stoffman 2009).

III. SOCIAL TRADING PLATFORMS

STPs represent a significant innovation in the financial sector by combining traditional trading mechanisms with the interactive features of social media (Liêu and Pelster 2020). Prominent examples of STPs include eToro—the first to launch in 2007—along with Zulutrade and *Wiki-folio*.

On these platforms, two primary types of users exist: traders, often referred to as leader traders, who publish their strategies and share their investment insights, and users who can fully observe the traders' activities and, when interested, become followers and replicate a trader's activity (Gemayel and Preda 2018). This replication process, often referred as to copy trading, is central to many STPs. In copy trading, the trader's activity is automatically mirrored in the followers' accounts in proportion to the amount they choose to invest (Gemayel and Preda 2018). The exact manner, how followers follow the investment decisions of leader traders, however, strongly depends on the individual STP. Similar to social media platforms, social trading works on the principle of full transparency, meaning that trading decisions are made public and followers can continuously observe their trading activities, and performance, allowing for real-time observation and engagement (Liu, Yang, and Tan 2022).

Specifically, STPs create an interactive environment through social networking features such as followers, transparent user profiles, public activity and sharing of trading strategies with the platform, direct messaging, comments and likes. Although there is no direct transfer of capital between traders and followers, the trader's decisions influences the investment outcomes of their followers, drawing parallels to the role of a portfolio manager (Doering and Paul 2015).

Figure 1 presents the general architecture of an STP, illustrating how the platform integrates trading activity with social interaction and investor engagement (Glaser and Risius 2018). While the link between followers and leader traders and the concept of full transparency applies to nearly all STPs, they differ significantly in their key characteristics, including trading approaches, social interaction, performance transparency, performance tracking tools, product offerings, fee structures, user diversity, geographic reach, and compensation models.

IV. SOCIAL TRADING PLATFORM USED IN ANALYSIS

The platform analyzed in this study is *Wikifolio,* a Vienna-based STP that enables private and professional investors, as well as media companies, to create and manage up to eight portfolios, termed "wikifolio". The investment universe spans over 520,000 stocks, Exchange-Traded Products, funds, investment certificates and leveraged products. The number of investable wikifolios has reached circa 10,000 on the platform. A wikifolio is a virtual portfolio in which traders simulate real trading strategies by managing virtual assets, i.e. assets are not actually bought or owned (Wikifolio 2024).

Upon successful completion of three key phases, the wikifolio can be converted into an investable index certificate. In the first phase, the so-called test phase, the trader creates a model portfolio based on a specific trading idea that is only visible to them. Once the trader decides to transition to the published phase, they will share the wikifolio publicly with platform users. However, it will not yet be a financial product to invest in. If the wikifolio has a term of at least 21 days, receives capital commitment of €2,500 and is bookmarked by at least 10 traders, it can become tradable. After a verification process of the trader, the portfolio becomes an index certificate, receives an ISIN and can be traded similar to an ETF on Stuttgart Stock Exchange, with prices provided by Lang & Schwarz. The index certificate is a financial product issued by Lang & Schwarz and tracks the performance of the assets in the wikifolio. Figure 2 displays the entire

creation of an open-index certificate, illustrating the interplay between traders, followers, *Wikifolio*, the Stuttgart Stock Exchange, and Lang & Schwarz.

As far as commitment in a wikifolio is concerned, the followers do not copy the trades directly in real time, but invest in the certificates that reflect the overall performance of the entire wikifolio. Moreover, followers have the option of buying and selling a wikifolio certificate via their bank or online broker. Additionally, platform users might range from casual spectators interested in watching a trader's strategy and learning from their actions to actual investors. When a user decides to become a follower of a specific wikifolio, it does not always imply that they would make financial contributions to it. It indicates that users are interested in or support the trader's performance or strategy. Following a wikifolio, like following someone on social media, allows to track the trader's performance and updates without having to invest money directly. Investing in a wikifolio necessitates additional steps, including the acquisition of a wikifolio certificate, which is issued as an exchange-traded instrument (Wikifolio 2024).

The performance of a wikifolio is determined by the proportional performance of the underlying securities held in the wikifolio, net of any applicable fees. Consequently, the performance of the wikifolio certificate is aligned with that of the wikifolio itself. Traders profit as soon as at least 10,000 euros are invested in a corresponding wikifolio certificate. Traders earn money through a performance bonus, which is linked to a performance fee (between 5 and 30 %) that they set themselves when creating their portfolio. The performance bonus is paid when the portfolio reaches a new high (Wikifolio 2024). This approach was chosen because, rewarding traders with a share of the profits generated for their followers can incentivize excessive risk-taking, as traders benefit from the profits but are not liable for the losses. To mitigate this, *Wikifolio* uses High-Water Marks (HWM), whereby performance fees are only collected when traders exceed their previous profit peaks. This structure discourages excessive risk-taking and

prioritizes consistent, long-term performance over short-term gains (Pangeas and Westerfield 2009).

Similar to other STPs, *Wikifolio* is characterized by social aspects. Every user has the opportunity to view the overall performance of a wikifolio since its creation as well as the performance over various time periods and the average annual performance. In addition, key risk figures such as the maximum possible loss and the liquidity of the certificates are displayed. Performance indicators such as the HWM and the Sharpe Ratio are also available. Figure 3 provides insight into the trader overview that users can access upon clicking on a specific trader. In addition, traders are scored with "Wikifolio Points", which are calculated daily based on 13 criteria such as trading activity, community engagement, media reputation and performance. A higher *Wikifolio* score means a higher ranking of a wikifolio on the *Wikifolio* leaderboard. High-performing wikifolios receive more visibility and tend to attract more followers (Wikifolio 2024). The way the ranking is displayed on the platform is shown in Figure 4 and the detailed ranking criteria are shown in Table 1. In addition, *Wikifolio* allows traders to comment on their own trading activities or general market observations. Unlike other STPs, this communication is unidirectional, i.e. followers cannot comment on traders' activities.

V. DISPOSITION EFFECT ON SOCIAL TRADING PLATFORMS

A. Enhancement and reduction of the disposition effect on social trading platforms

Studies on platforms such as eToro, Zulutrade and MyForexBook show that transparency and public scrutiny can increase DE. Pelster and Hofmann (2018) found that traders with a high number of followers on eToro were less likely to realize losses, which can be attributed to maintaining a positive public image. Similarly, Glaser and Risius (2018) observed that Zulutrade traders became more loss averse under scrutiny, and Jabr and Rai (2022) reported that DE

increased with higher follower count, suggesting that reputational pressure may drive traders to avoid losses in order to appear successful.

In contrast, other studies suggest that transparency reduces DE by increasing accountability and fostering rational behavior. Lukas and Eshraghi (2017) found that DE significantly decreased on *Wikifolio* as portfolios transitioned to investable status, i.e. are more transparent phase.

B. Explanatory approaches for contradicting findings

Firstly, the financial incentives on these platforms can be an explanation for increased DE. On eToro and Zulutrade, for example, traders are rewarded based on the number of followers, which can incentivise short-term gains to attract more followers. However, Gemayel and Preda (2018) point out that these results may be context-specific and argue that DE is actually strengthened when there is no monetary incentive. Unlike eToro and Zulutrade, *Wikifolio* uses a HWM system, which rewards traders only when they exceed previous performance peaks, aligning incentives with long-term rationality rather than short-term gains.

STPs also differ in how following a trader translates to financial engagement. On Zulutrade and eToro, following a trader typically involves copy trading, where the follower's account automatically replicates the trader's transactions, leading to direct financial involvement (Glaser and Risius 2018; Hofman and Pelster 2018). In contrast, *Wikifolio* allows users to follow traders without automatic investment; followers can observe trading strategies without committing funds unless they choose to invest separately (Wikifolio 2024). This distinction affects trader behavior and platform dynamics, as the direct financial linkage on Zulutrade and eToro may create performance pressures not present on *Wikifolio*.

Beyond monetary incentives and different layers of commitment, platform design and the presentation of performance metrics also shape DE. Liêu and Pelster (2020) reported lower DE when realized and unrealized positions were displayed together, as opposed to focusing only on realized transactions, as seen on eToro. Visual aids, such as the color-coded performance

metrics on *Wikifolio*, have also been linked to reduced DE (Lukas and Eshraghi 2017). Moreover, asset class differences play a role; Pelster and Hofmann (2018) found that forex traders on eToro tend to close positions quickly when facing paper losses, unlike equity traders (O'Connell and Teo 2005).

C. Wisdom of the Crowd as a corrective mechanism

The "wisdom of the crowd" effect provides a potential corrective mechanism for reducing DE on STPs. This concept suggests that collective social validation can incentivize traders to adopt more rational behaviors by aligning their strategies with long-term goals.

Platforms like *Wikifolio* show how crowd-driven mechanisms can potentially reduce DE. Lukas and Eshraghi (2017) found that traders exposed to more attention, expressed through higher invested capital (AUM), exhibit lower DE. This suggests, that *Wikifolio* balances transparency with rational trading incentives, such as *Wikifolio's* HWM system. Pelster and Hofmann (2018) further demonstrated that public recognition enhances traders' confidence, reducing susceptibility to emotional biases like DE. This highlights the fact that traders who are selected by the crowd for their perceived skill are more likely to adjust their behavior to maintain their reputation.

However, the effectiveness of crowd-driven mechanisms depends on platform-specific dynamics. On platforms like eToro and Zulutrade, crowd validation may incentivize short-term behaviors that amplify DE. For example, traders may prioritize quick profits to attract followers, as the financial rewards tied to follower counts overshadow the rationalizing effects of public scrutiny.

These findings suggest that the relationship between transparency, social validation, and platform incentives shapes DE in complex ways. Platforms with monetization schemes tied to social metrics may amplify DE, while those emphasizing rationality and long-term performance can leverage the "wisdom of the crowd" to reduce it.

VI. HYPOTHESES DEVELOPMENT

Building on the existing body of research on the DE on STPs and with a particular focus on *Wikifolio*, this theis formulates a combination of hypotheses to analyze the DE in greater depth. Following the approach of Jabr and Rai (2022), the analysis is expanded beyond a single social factor by breaking it down into multiple variables, specifically emphasizing followers and page visits as core social interaction metrics, as they may have opposing effect on the same platform. This research also builds on the work of Lukas and Eshraghi (2017), who used AUM as a proxy for followers and included it as an indicator of a particular form of user attention, namely monetary engagement. Additionally, a novel aspect of this study is the inclusion of ranking as a variable in examining the DE on *Wikifolio*, which adds an additional layer of complexity and depth to the analysis.

The goal is to analyze different layers of attention on *Wikifolio*, ranging from passive interest to more engaged forms of interaction. At the most basic level, page visits represent passive interest, as they reflect curiosity about a trader's profile without implying any form of commitment (Jabr and Rai 2022). Moving beyond passive interest, followers indicate a higher level of engagement, as following a trader shows endorsement or intent to observe their decisions more closely (Jabr and Rai 2022). However, this does not necessarily involve financial involvement. AUM captures financial engagement, reflecting the capital invested by users in a trader's portfolio, thus representing a significant level of commitment (Lukas and Eshraghi 2017). Finally, ranking aggregates various performance metrics, providing a comparative measure of a trader's success and making them and their performance more visible and easily comparable to others. This layered analysis offers a comprehensive understanding of how different forms of attention influence trader behavior and outcomes.

A. Page visits

Page visits represent a form of passive crowd scrutiny where users show peer interest without directly following or investing (Jabr and Rai 2022). Such passive attention is distinct from follower commitment but still exerts a social influence by creating an awareness of being observed (Jabr and Rai 2022). Research on STPs like Zulutrade suggests that views can moderate DE by encouraging more cautious and deliberate trading, as traders feel pressured to maintain sound performance in the presence of broad public visibility (Jabr and Rai 2022). As heightened attention on *Wikifolio* generally leads to a decrease in DE, similar results are expected as for Zulutrade. It is therefore suggested that an higher number of page visits will result in a marginal increase in holding times of gains compared to losses, indicative of a decrease in dispositional behavior.

H1: Increased page visits are hypothesized to reduce DE, as passive social scrutiny encourages traders to make cautious and rational decisions.

B. Followers

Followers on STPs represent a stronger commitment to the trader, resulting from confidence in the trading strategy of the trader (Jabr and Rai 2022). Followers are a key social aspect, as they reflect not only the possible investments made by others but also the attention and observation that traders get from their audience. This double nature of followers—acting as both financial supporter and social validators—makes them an important factor in understanding how traders manage their portfolios (Jabr and Rai 2022). However, it must be noted that other than for Zulutrade, on *Wikifolio* a follower can but does not necessarily mean she is an investor. It therefore remains a crucial factor, but cannot be regarded as a monetary commitment per se.

Higher follower counts suggest that traders are recognized by the crowd for perceived skill or disciplined behavior, a dynamic shown to influence trading actions (Pelster and Hofman 2018). Social validation from a large follower base can act as a moderating force on DE by encouraging

traders to maintain rational strategies that protect their reputation (Pelster and Hofmann 2018). Other than Jabr and Rai 2022, stating that increased follower count leads to overconfidence, I propose that more followers is a sign of more interest and more committal attention. As shown in previous studies on *Wikifolio* this is correlated with an attenuated DE.

H2: Traders with a higher number of followers are expected to exhibit reduced DE, as crowd validation reinforces rational trading behavior.

C. AUM

AUM adds a further layer of commitment, which in the case of *Wikifolio* is fully monetary. Lukas and Eshraghi (2017) already used AUM as a metrics, however as a proxy for the number of followers standing for the amount of attention and in different levels of transparency. They found a substantial interaction between the gain coefficient and AUM, suggesting that wikifolios with high capital investments are strongly influenced by transparency. Based on the significant results in Lukas and Eshraghi's (2017) study, it is expected that an increasing amount of AUM in a wikifolio is be associated with a decreased DE. It should be noted that, in this thesis, the focus is instead to examine whether AUM is generally associated with a decrease in the DE, regardless of transparency levels.

H3: A higher AUM is associated with a reduced DE among traders. This can be attributed to a signal of greater credibility through financial commitment, promoting rational behavior.

D. Ranking

On *Wikifolio*, 13 ranking metrics combine performance indicators with measures of social engagement, giving traders with high ranks increased visibility and potentially acting as a deterrent against DE. *Wikifolio's* ranking system seems to be primarily based on long-term performance rather than short-term gains, suggesting to see a reduced DE among high-ranking traders. This is suggested as it adds a further layer of increased attention and observation by peers of their strategies, fostering a commitment to consistent, rational trading behaviors

(Scheckenbach, Wimmer and Dorfleitner 2021; Liêu and Pelster 2020). Similarly, Scheckenbach et al. (2021) found that traders on *Wikifolio* reduce their risk exposure when they attract more attention after improving their ranking, likely due to the increased scrutiny from followers.

On *Wikifolio*, the ranking system incorporates both short-term performance metrics (e.g., realized gains) and long-term performance metrics (e.g., total portfolio value), as well as social engagement factors (e.g., media reputation). While the short-term metrics could create some pressure to realize profits quickly, the visibility generated by the ranking system should offset this effect. The accountability that comes with high visibility likely encourages traders to avoid rash decisions, leading to more rational, long-term behavior that reduces DE.

H4: Higher-ranking traders are expected to demonstrate lower DE due to the need to maintain consistent, rational strategies under the increased public scrutiny associated with high visibility.

VII. EMPIRICAL APPROACH

This section outlines the empirical strategy used to investigate whether traders on *Wikifolio* with higher social metrics have a reduced DE. This approach uses linear regression to analyze the moderating effects of these metrics on DE, guided by the "wisdom in the crowd" hypothesis.

A. Research Question

The core research question (RQ) is: *Do higher social metrics (page visits, followers, AUM and, rank) on STPs reduce the DE by incentivizing crowd-validated, rational trading behavior?* This RQ is the guide to find out if and how these metrics serve as indicators of crowd approval and reduce DE by encouraging traders to avoid irrational trading decisions.

B. Model Selection

Given the continuous nature of DE and the aim to analyze its relationship with social metrics, a linear regression model is applied. The base linear model tests the main DE effect by regressing the holding duration of trades on gains and losses, which is then extended with interactions for page visits, followers, AUM and rank.

C. Model Specification

The base model assesses the DE by regressing holding duration on the realized gains and losses. To measure the DE, the realized profit or loss of each position is first adjusted so that it is represented as an average daily profit or loss. The average daily profit or loss is calculated to evenly distribute the total profit over the holding period, creating a consistent metric that can be interpreted regardless of the holding period.

A linear regression is then performed to test whether there is a significant correlation between the holding period and the average daily profit/loss. A DE would be characterised by a significant negative relationship, which would mean that traders tend to sell winning positions (positive daily profit) faster, while holding losing positions (negative daily profit) longer.

This model is:

$$Duration = \beta_0 + \beta_1 gains + \varepsilon \quad (1)$$

Where:

- β_0 is the intercept, which is the expected value of duration when gains is zero.
- β_1 is the slope coefficient for gains, indicating the change in duration for a one-unit change in gains.
- ε represents the error term, capturing the difference between the observed and predicted values of duration.

Note: The terms “gains” and “realized gains” will be used interchangeably in the following.

For further analysis, interaction terms are added for each social metric (page visits, followers, AUM, rank) to evaluate their moderating effects on DE. The general form of the extended model is:

$$DE_{ij} = \beta_0 + \beta_1 Gains/Losses + \beta_2 Social\ Metric_{ij} + \beta_3 (Gains/Losses_{ij} * Social\ Metric_{ij}) + \varepsilon_{ij} \quad (2)$$

Where:

- β_1 captures the main effect of gains/losses on DE.
- β_2 represents the main effect of each social metric
- β_3 measures the interaction effect, indicating whether social validation through crowd metrics affects DE tendencies in trading behavior.

Finally, a robustness check is performed by including the status of the as a control variable to capture how different stages of public engagement affect DE.

D. Key Variables

The key variables used are presented in tabular form below.

Variable	Definition
Dependent Variable	
Holding Time (T)	Measured by trade holding duration, indicating whether gains/losses impact the length of time a position is held before being sold.
Independent Variables	
Views (VW)	Reflects passive interest and scrutiny from platform users, representing a subtler form of crowd validation.
Followers (FL)	Reflects active interest and counts the number of individuals who follow a specific wiki-folio.
AUM	Represents mometary interest and is the total amount of capital invested by followers in a trader's wikifolio.
Rank (RK)	Represents a metric based on 14 criteria, including performance and engagement.
Control Variables	
Wikifolio Phase	The phase of a wikifolio's lifecycle (test, published and investable) as a control variable to test the relevance of different transparency levels on the platform.

E. Estimation Method

The programming tool selected for the analysis was R.

The models are estimated using Ordinary Least Squares (OLS) with robust standard errors to address any heteroskedasticity in the data. For robustness, a Huber-White/Sandwich estimator

is used to ensure reliable inference even if standard OLS assumptions (e.g., homoscedasticity) are violated. A control model incorporates the status of the wikifolio as an additional robustness check to capture potential DE variations based.

Additionally, fixed effects at trader level were considered for robustness reasons, as they could control for unobservable characteristics such as experience or risk tolerance. However, in the absence of trader-level data, they could not be included, so possible biases due to unobserved heterogeneity were not addressed. Instead, the analysis focusses on aggregated social metrics and their influence on DE.

VIII. DATA

A. Dataset description

Six datasets covering the year 2023 were gathered from *Wikifolio*. They provide insights into both social metrics and transaction data, with daily and weekly data, focusing on private investors and equity trading.

A brief description of the individual datasets and their key variables can be found in Table 2.

B. Data preparation and preprocessing

To create one dataset from the six data sources that is appropriate for analysis, data preprocessing was performed. This included data formatting, handling of missing data, variable aggregation, merging and outlier handling. Social engagement metrics, including the number of followers, page visits and ranking, were aggregated at both the trader and the wikfolio level. For each trader, the mean value of a social metric is calculated and then applied at the wikifolio level. Consequently, all wikifolios of a given trader exhibit identical values for these metrics, as they represent the average social influence of that particular trader.

The calculation of trading duration was an additional element in the measurement of DE. In order to get the duration of each asset's holding period, the time interval between each purchase and the following sale or order was calculated. The data was initially organised according to

the following parameters: WikifolioId, ISIN, ExecutionDate and OrderDirection. This allowed for the creation of a chronological order. The initial purchase date was designated as the reference point for each transaction, and the duration was determined by subtracting the sell date from this reference. Only sales transactions were considered in this calculation, as they represent completed transactions. The missing performance data in gains were omitted, representing 1266 values. Furthermore, transactions initiated prior to 1 January 2023 were excluded to ensure the completeness and accuracy of the data on the commencement and completion of transactions.

Additionally, before testing the hypotheses 1-4, adjustments to account for potential biases due to differing durations of asset holdings were performed. Specifically, the gain for each position was adjusted by its holding duration to calculate an average daily gain/loss. This adjustment was crucial because without it, longer-held positions might disproportionately influence the disposition effect measurement. This adjustment was achieved by applying a transformation that standardized gains over time, excluding extreme outliers (with values beyond -0.5 and 0.5) to ensure a robust analysis.

Following the cleaning of the data and aggregation of the variables, the datasets were merged to create a comprehensive dataset for analysis. The merging was conducted using common identifiers, such as WikifolioId and ISIN, thereby ensuring that each portfolio's performance data, social engagement metrics and transaction details were closely aligned.

An overview of the parametric measures can be found in Table 3, while the corresponding boxplots are presented in Figure 5. The boxplots reveal a substantial number of outliers across several variables, necessitating an outlier adjustment. For instance, followers and page visits both show significant right skew due to a few extremely high values, which distort the mean and exaggerate the typical engagement levels. Similarly, AUM are heavily influenced by a handful of portfolios with exceptionally high values, leading to a misleadingly large average

that doesn't accurately represent most portfolios. These outliers can skew the results of any further analysis, so a 1% winsorization was applied to mitigate their impact and produce a more balanced view of the dataset. This adjustment ensures that the summary statistics better reflect the central tendencies and typical variability within the data, providing a more reliable foundation for subsequent analyzes. The descriptive statistics and the corresponding boxplots after cleaning can be found in Table 4 and Figure 6.

C. Descriptive statistics

The dataset shows that traders can choose among 7,518 underlyings from which 95% were actually used in wikifolios. One of the most prominent assets found across the active wikifolios was Amazon, followed by Apple and on third place Microsoft. There are 5,215 traders managing 9,265 wikifolios, containing 144 underlyings on average, managed by the traders. The average number of wikifolios per trader amounts 1.77. It was further determined that 93% of the wikifolios in the dataset are investable, while 5% are published, with approximately 1% being in the test phase, which can be seen in Table 5. The average time for a wikifolio to become investable is 280 day. Traders sell on average 2,688.9 certificates.

Concerning trading details, the sample entails around 770,000 transactions. Approximately 88% of the orders were market orders, with 45% of the transactions being buy orders and 33% being sell orders. On average, each trader realizes a gain of 3.92 with a minimum loss of -45.577 and a maximum gain of 111.061. The mean number of followers is 22,997.6, with a maximum of 313,230.0 and a minimum of 106.0. On average, traders receive 6705.5 page visits, with a maximum of 98,368.0 and a minimum of 53.0. The maximum AUM is at 12,465,499.7, the minimum at 0.0, and the average at 731,211.6.

D. Explorative statistics

The correlation analysis shown in Figure 7 provides a visual overview of the relationships between the variables, with the colors indicating the strength and direction of the correlation. Six

variable pairs show high correlations. The strongest is between AUM and contracts sold (0.81), suggesting that higher AUM may signal quality or stability, encouraging more certificate purchases. Similarly, AUM correlates with followers (0.71) and page visits (0.61), indicating a potential social proof effect where portfolios managing larger investments attract more followers and engagement. The positive correlation between followers and page visits (0.62) supports this idea, reflecting more engagement with popular portfolios. Additionally, the correlation between followers and contracts sold (0.55) suggests that popular portfolios drive higher certificate sales.

These findings align with Lukas and Eshraghi (2017), who noted that public visibility and scrutiny could reduce bias in decisions. The significance matrix in Figure 8 confirms the robustness of these correlations, underscoring the importance of including AUM in analyzing DE on *Wikifolio.*

E. Normality assumption testing

For the normality testing of the variables, the Jarque-Bera test was applied to each metric to determine whether they follow a normal distribution. The results, shown by the test's X^2 statistics and p-values, indicate that none of the variables in this dataset follow a normal distribution, as all p-values are less than 2.2e-16, providing strong evidence to reject the Null Hypothesis of normality. Despite this, linear regression can still be performed. In the context of social trading, which is relatively new in research, normality of the variables themselves is not a strict requirement for regression analysis (Kutner, Nachtsheim, Neter and William 2005). Best Linear Unbiased Estimator assumptions primarily require normality of the residuals rather than of the predictors. While the normality of residuals may also be violated here, this mainly affects the standard errors, not the effect sizes. Since the effect sizes are strong and significant, the potential bias in the standard errors does not presents a problem for the validity of the results. However, this limitation will be noted in the analysis.

IX. EMPIRICAL RESULTS

This study studies whether higher social metrics on *Wikifolio* reduce the DE by promoting crowd-validated behavior. Therefore, the duration an asset is held was modeled as a function of realized gains, with interaction terms analyzing the moderating effects of social metrics.

A. Disposition Effect

The regression analysis, presented in Table 7, confirms a significant and negative relationship between realized gains and holding duration, with each additional monetary amount of profit decreasing holding duration by approximately 185.24 days ($p < 0.001$). This result strongly supports the presence of the DE. However, the model's Multiple R-squared value of 0.001477 highlights that realized gains alone explain less than 0.15% of the variation in holding duration. This suggests the need to consider additional factor in influencing trading behavior.

B. Page visits

The results for page visits are shown in Table 8. Page visits, a proxy for passive social observation, are positively associated with holding duration (Estimate = 0.000061, $p < 0.001$). This suggests that wikifolios with more page visits are held longer, possibly reflecting an awareness of being observed. However, the interaction between page visits and realized gains is insignificant ($p = 0.851$). This indicates that while page visits may influence holding duration, they do not directly reduce DE. These findings suggest that passive observation lacks the accountability needed to drive rational behavior.

C. Followers

As demonstrated in Table 9, Follower count demonstrates a significant interaction with realized gains (Estimate = 0.00033, $p = 0.00313$), indicating that traders with more followers exhibit less DE. The direct effect of followers on holding duration is marginally significant ($p = 0.079$), highlighting their primary impact through moderating DE. This supports the hypothesis that crowd validation through followers promotes rational trading by creating more visibility and

accountability. Traders with higher follower counts are more aware of public scrutiny, encouraging them to avoid early sales of winning positions or prolonged holding of losing ones.

D. AUM

AUM shows no significant interaction with realized gains, as shown in Table 10, suggesting that monetary attention alone does not reduce DE. However, AUM is positively and significantly associated with holding duration (Estimate = 0.13788, p = 0.00158), implying that larger managed assets may encourage longer holding periods. This contrasts with the hypothesis that AUM, as a form of crowd endorsement, incentivizes rational behavior. The findings indicate that AUM requires additional social or transparency-related factors to influence trading decisions effectively.

E. Ranking

Ranking emerges as the most influential social metric in reducing DE. This is highlighted by the regression results shown in Table 11. The interaction between ranking and realized gains is highly significant (Estimate = 0.027, $p < 0.001$), with better rankings associated with more rational trading behavior. Additionally, rankings correlate with shorter holding durations (Estimate = -0.0029, $p < 0.001$), reflecting the disciplined trading of highly ranked traders. These findings strongly align with the "wisdom of crowds" hypothesis, where rankings validate trader success and attract scrutiny, fostering rational decision-making.

F. Transparency

The analysis of wikifolio phases - test, published, and investable - provides further insights into the role of transparency in moderating DE. As depicted in Table 12 the published phase reduces DE compared to test phase (Estimate = 128.38, p = 0.00885), but investable phase shows the strongest reduction (Estimate = -193.07, $p < 0.001$). These results highlight the importance of

transparency, where increased public scrutiny in later phases encourages more disciplined trading behavior. The absence of significant effects in the test phase suggests that traders experiment with strategies at this stage, leading to less consistent behavior.

X. DISCUSSION

The results partially confirm the RQ: higher social metrics reduce DE by fostering crowd-endorsed rationality, stating that collective validation through public observation fosters rational decision-making. The results demonstrate that not all social metrics equally influence DE. Followers and rankings prove to be the most important moderators, while page visits and AUM extend the holding period of an asset, yet have no significant impact on DE.

A. Discussion of results

The findings reveal a significant interaction between realized gains and follower count, indicating that traders with more followers exhibit less dispositional behavior. This aligns with the theory of "wisdom of crowds," where higher visibility creates accountability and reduces irrational trading tendencies. These results confirm prior literature on *Wikifolio*, particularly Lukas and Eshraghi (2017), who emphasize the disciplining effect of higher follower counts on trading behavior.

Similarly, rankings play a crucial role in reducing DE, as better rankings enhance a trader's visibility and attract more followers, potentially creating a positive reinforcement loop. High-ranking traders face increased public scrutiny and are motivated to maintain their standing by trading more rationally. These findings are consistent with studies by Scheckenbach et al. (2021), Jabr and Rai (2022), and Liêu and Pelster (2020), which show that public ranking systems incentivize less biased trading behavior. The effect of rankings reinforces the "wisdom of crowds" hypothesis, as high visibility encourages disciplined and rational decision-making over

time. These findings are supported by the lower DE seen in investable wikifolios highlights the importance of transparency in moderating low dispositional behavior.

Contrary to the findings for followers and rankings, page visits and AUM have limited or no significant impact on DE. These results deviate from parts of the existing literature and highlight the need for further investigation. Page visits show no significant interaction with realized gains, indicating they do not directly reduce DE. This is in in contrast to what has been expected from the passive form of attention to also decrease the DE on *Wikfolio*. Similarly, it is not in line with the results of Jabr and Rai (2022), who found a significant interaction between page visits and realized gains on Zulutrade. A plausible explanation lies in the differing presentation of page visits across platforms. On Zulutrade, page visits are explicitly displayed to traders as a social validation metric, likely enhancing their perceived importance. On *Wikifolio*, page visits are presented as a simple summary, which may fail to generate the same level of accountability or social scrutiny. This difference highlights the role of platform design in shaping the effectiveness of social metrics.

The findings on AUM also contradict parts of the literature. While AUM is positively correlated with holding duration, it does not significantly interact with realized gains to reduce DE. Lukas and Eshraghi (2017) reported that AUM reduced DE in highly transparent portfolio stages, such as the Published and Investable phases. Their results possibly differ from this study's results for different research methods. The results suggest that AUM alone, without additional transparency or social validation, is insufficient to influence trading discipline. These observations underscore the importance of active social engagement over monetary metrics in moderating DE.

The "wisdom of crowds" provides a unifying framework for interpreting the results. Metrics that actively engage traders, such as followers and rankings, foster accountability and reduce DE by promoting disciplined decision-making. Traders under public scrutiny are incentivized

to adopt rational trading strategies to maintain their reputation and attract more followers. In contrast, metrics that lack active engagement, such as page visits fail to leverage crowd validation effectively. Similarly, the sole monetary engagement of a follower for a trader, although it is the strongest form of engagement on *Wikifolio*, is not enough to reduce DE. While these metrics provide forms of passive monitoring or monetary attention, they do not create the same sense of visibility that is created by the other two factors.

B. Implications

This study advances the literature by emphasizing the differentiation between active social metrics (e.g., followers, rankings) and passive and monetary metrics (e.g., page visits, AUM), demonstrating that active metrics more effectively reduce DE by strengthening accountability and rational decision-making. It highlights the importance of platform-specific dynamics, showing how the design and presentation of metrics, such as those on *Wikifolio* versus Zulutrade, influence their effectiveness. Additionally, the study's use of detailed social metric proxies and interaction effects provides a more detailed approach.

Wikifolio, unlike other STPs such as Zulutrade, eToro, and MyForexBook, effectively leverages crowd validation to reduce DE, particularly through specific metrics. This positions *Wikifolio* as a model STP that favors rational trading behavior, benefiting users with less biased decisions and potentially more sustainable, lower-risk returns. However, it is necessary to examine in detail what makes *Wikifolio* so special that it encourages DE-reduced behaviour, be it the unique HWM model or the wikfolios as an investable product versus copy trading.

C. Limitations

This study emphasises the relationship between social factors and DE on *Wikifolio*, but is limited by platform-specific metrics that may not fully account for trader motivation or external influences. Fixed trader characteristics, such as experience, risk tolerance or portfolio composition, are not considered and could influence both social metrics and DE. Furthermore, by

focussing on aggregate metrics such as followers and page visits, their dynamics, such as timing or interactions with market conditions, are not addressed. Future research could explore these dynamics using non-linear models (e.g. hazard models) or investigate the role of reward systems. Finally, significant deviations from the normality of the data may affect the standard error estimates, suggesting the need for robust or non-parametric regression methods to validate the results.

XI. CONCLUSION

The main results, summarized in Table 12, indicate that a significant reduction in DE is achieved through followers, the active form of social support, accountability reinforcement and rationality. The promotion of visibility and comparability through the ranking system on *Wikifolio* is also a strong factor that reduces traders' DE over time. In addition, transparency on *Wikifolio* plays an extremely important role, with DE decreasing the more visible and irrefutable a wikifolio becomes. However, a limited influence of passive metrics and monetary support is observed. Page visits and AUM have weaker effects, suggesting that indirect attention and financial engagement do not have the social validation needed to influence trading behaviour.

This adds a new layer to the findings in the literature that attention can be multifaceted and lead to different outcomes in terms of DE on STP.

Therefore, when examining DE on STP, attention and validation on STP need to be broken down into more nuanced factors, namely passive and active attention and monetary validation, as attention summarised in a particular factor may or may not influence DE, which could lead to misleading conclusions for a STP.

REFERENCES

Barber, Brad M., and Terrance Odean. 2001. "Boys will be Boys: Gender, Overconfidence, and Common Stock Investment." *The Quarterly Journal of Economics*, 116(1): 261–92.

Barberis, Nicholas, and Wei Xiong. 2012. "Realization utility." *Journal of Financial Economics*, 104(2): 251–71.

Breitmayer, Bastian, Tim Hasso and Matthias Pelster. 2019. "Culture and the disposition effect." *Economics Letters*, 184: 108653.

Brown, T. J., Dacin, P. A., Pratt, M. G., and Whetten, D. A. 2006. "Identity, Intended Image, Construed Image, and Reputation: An Interdisciplinary Framework and Suggested Terminology." *Journal of the Academy of Marketing Science*, 34(2): 99–106.

Cici, Gjergji. 2012. "The Prevalence of the Disposition Effect in Mutual Funds' Trades." *Journal of Financial and Quantitative Analysis*, 47(4): 795–820.

Coval, Joshua D., and Tyler Shumway. 2005. "Do Behavioral Biases Affect Prices?" *The Journal of Finance*, 60(1): 1–34.

Da Costa, Newton, Marco Goulart, Cesar Cupertino, Jurandir Macedo, and Sergio Da Silva. 2013. "The disposition effect and investor experience." *Journal of Banking & Finance*, 37(5): 1669–75.

Deaves, Richard, Erik Lüders, and Guo Y. Luo. 2009. "An Experimental Test of the Impact of Overconfidence and Gender on Trading Activity." *Review of Finance*, 13(3): 555–75.

Dhar, Ravi, and Ning Zhu. 2006. "Up Close and Personal: Investor Sophistication and the Disposition Effect." *Management Science*, 52(5): 726–40.

Doering, Philipp, Sascha Neumann, and Stephan Paul. 2015. "A Primer on Social Trading Networks: Institutional Aspects and Empirical Evidence." *SSRN Electronic Journal*.

Frazzini, Andrea. 2006. "The Disposition Effect and Underreaction to News." *The Journal of Finance*, 61(4): 2017–46.

Gemayel, Rami, and Alexandru Preda. 2018. "Does a scopic regime erode the disposition effect? Evidence from a social trading platform." *Journal of Economic Behavior and Organization*, 154, 175-190.

Glaser, Markus, and Martin Weber. 2007. "Overconfidence and trading volume." *The Geneva Risk and Insurance Review*, 32(1): 1–36.

Grinblatt, M. 2000. "The investment behavior and performance of various investor types: a study of Finland's unique data set." *Journal of Financial Economics*, 55(1): 43–67.

Jabr, Waseem, and Arun Rai. 2022. "When Trading Becomes Social: How Social Trading Platforms Affect the Disposition Effect." In *Proceedings of the Forty-Third International Conference on Information Systems, Copenhagen 2022*.

Kahneman, Daniel, and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica*, 47(2): 263.

Kutner, Michael H., Christopher J. Nachtsheim, John Neter, and Li William. 2005. *Applied Linear Statistical Models*. 5th ed. McGraw-Hill/Irwin, New York. ISBN 0-07-238688-6.

Liêu, L. M., and M. Pelster. 2020. “Framing and the disposition effect in a scopic regime.” *The Quarterly Review of Economics and Finance*, 78: 175–85.

Liu, Y., Yang, M., and Tan, Y. 2022. “Someone is Mimicking You: Investigating Copycats in Social Trading.”

Locke, Peter R., and Steven C. Mann. 2005. “Professional trader discipline and trade disposition.” *Journal of Financial Economics*, 76(2): 401–44.

Lukas, Marcel F., and Arman Eshraghi. 2017. “The Disposition Effect in Social Trading: Influence of Transparency on Investment Decisions.” *SSRN Electronic Journal*.

Neumann, Sascha, Stephan Paul,and Philipp Doering. 2013. “Remuneration and Risk-Taking – Empirical Evidence for Social Trading.” *SSRN Electronic Journal*.

Odean, Terrance. 1998. “Are Investors Reluctant to Realize Their Losses?” *The Journal of Finance*, 53(5): 1775–98.

Pangeas, Stavros, and Mark M. Westerfield. 2009. “High-Water Marks: High Risk Appetites? Convex Compensation, Long Horizons, and Portfolio Choice.” *The Journal of Finance*, 64(1): 1–36.

Pelster, Matthias, and Annette Hofmann. 2018. “About the fear of reputational loss: Social trading and the disposition effect.” *Journal of Banking & Finance*, 94: 75–88.

Rau, Holger A. 2013. “Does Team Investment Influence the Disposition Effect? Experimental Evidence.” *SSRN Electronic Journal*.

Seru, Amit, Tyler Shumway, and Noah Stoffman. 2009. “Learning By Trading.” *SSRN Electronic Journal*.

Scheckenbach, Isabel, Maximilian Wimmer, and Gregor Dorfleitner. 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.

Shefrin, Hersh, and Meir Statman. 1985. “The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence.” *The Journal of Finance*, 40(3): 777–90.

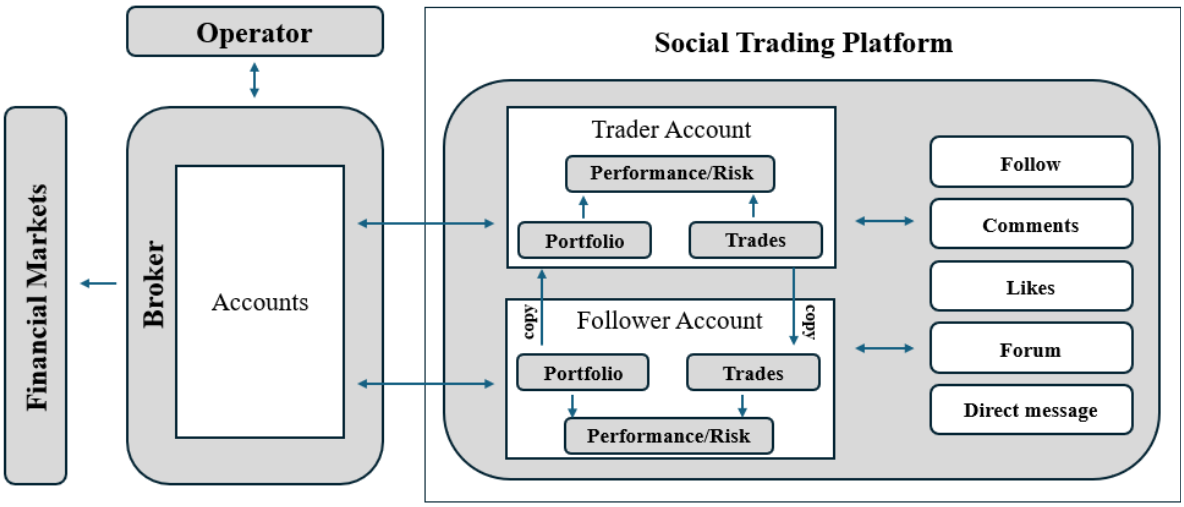
Thaler, Richard H. 1999. “Mental accounting matters.” *Journal of Behavioral Decision Making*, 12(3): 183–206.

Wikifolio “Wikifolio Social Trading Platform.” Accessed 10/11/2024. https://www.wikifolio.com.

APPENDIX

I. Background on *Wikifolio*

Figure 1: General structure of an STP (see Glaser and Risius 2018)



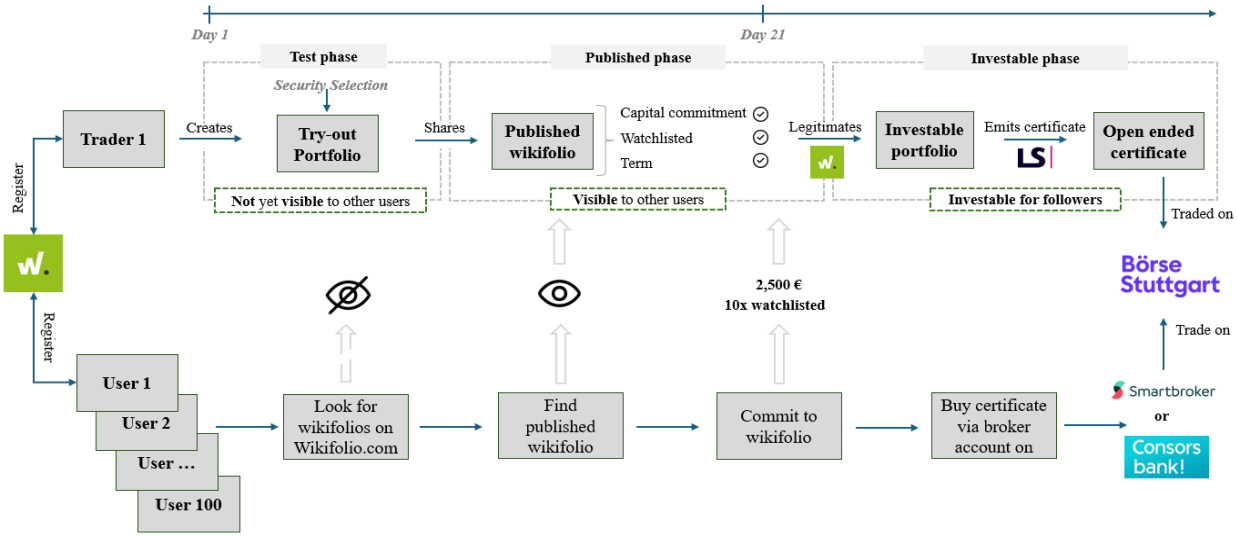
This diagram illustrates the general structure of an STP and illustrates the close relationship between trader and follower within the platform, as well as the parties involved in the social trading ecosystem, namely the broker with whom the users have their accounts, the broker's operator, ensuring smooth communication between the broker and the social trading platform, and the higher-level financial markets on which the actual trading of financial instruments takes place.

Within the social trading platform, primarily followers and traders who each have an account interact with each other. The trader's account contains a portfolio of financial instruments that they manage. Traders execute trades (buying and selling assets) that affect the portfolio and contribute to performance/risk metrics. These metrics are calculated based on the performance of the portfolio and the trader's trading decisions and indicate the trader's financial success and risk level. The follower account is in turn linked to the trader account and can copy the trades made by the trader. Followers can automatically copy the trader's portfolio and trades and thus

imitate the trader's strategies. Once a trade/portfolio has been copied, it is displayed in the follower's portfolio. The follower's performance and risk figures are then linked to the trades they have copied.

The social component is made clear by the interaction options on the right, breaking up traditional trading and making the trader's profile similar to a social media channel with functions such as follows, views, likes, comments and messaging functions to exchange ideas, build networks and improve strategies.

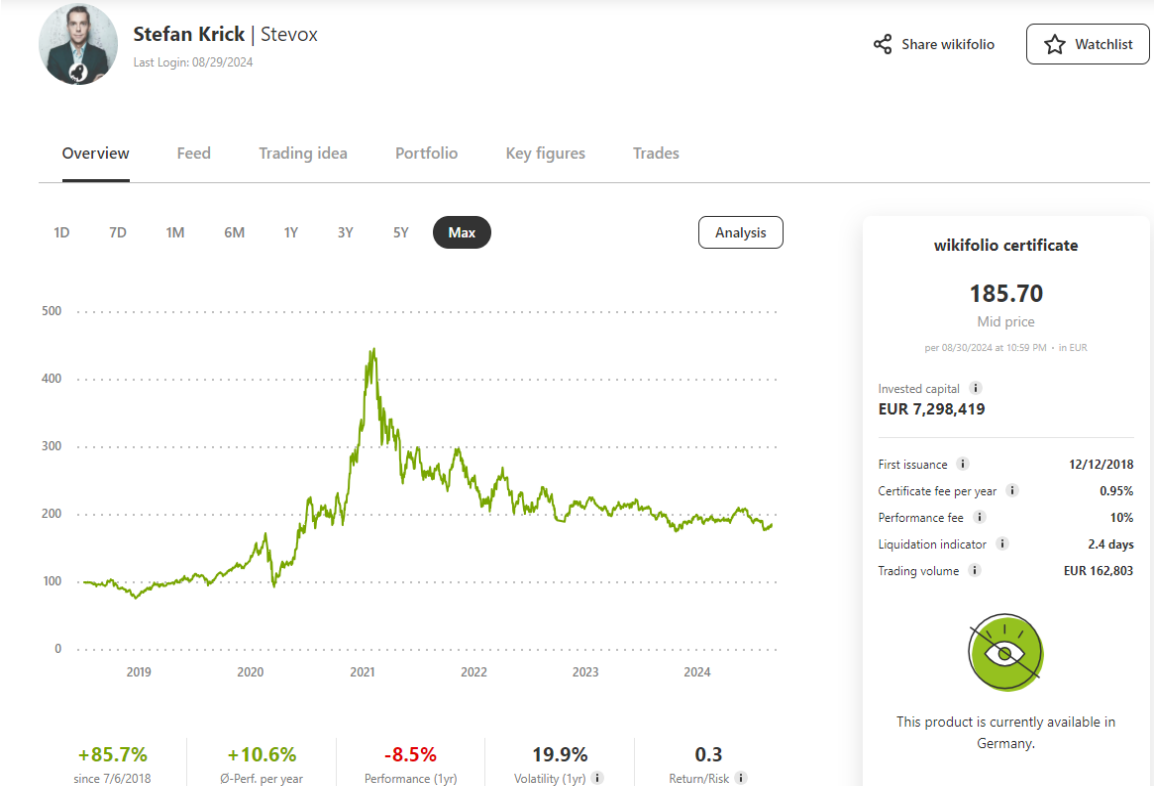
Figure 2: Creation process of an investable wikifolio (Own representation)



This diagram shows the detailed process of creating an investable wikifolio. The process starts with registration, where one part of the user decides to be a trader and the other to monitor wikifolios on the platform and possibly become a follower, this part is initially referred to as a user. The trader starts by creating and testing a portfolio. The portfolio is only visible to the trader and cannot be found by other users. If the trader wants to make his portfolio visible, he can do so under certain conditions, followed by a published status of the wikifolio. Now others can also find the wikifolio and add it to their watchlist, view the virtual shares and comments

and follow the transactions in the wikifolio. However, these wikifolios do not yet have an associated wikifolio certificate, for which it must be given investable status. To achieve this, certain requirements must be met. The wikifolio requires at least ten watchlistings with a total amount of EUR 2,500 and it must be at least 21 days old. In order to legitimize as a wikifolio trader, one must send a scan of an ID document as well as address data. The wikifolio as a synthetic reference portfolio to which a wikifolio index refers. Lang & Schwarz Aktiengesellschaft then issues open-end index certificates. These open-end index certificates are traded on the Stuttgart Stock Exchange and can be bought and sold at many banks and online brokers or directly at Lang & Schwarz.

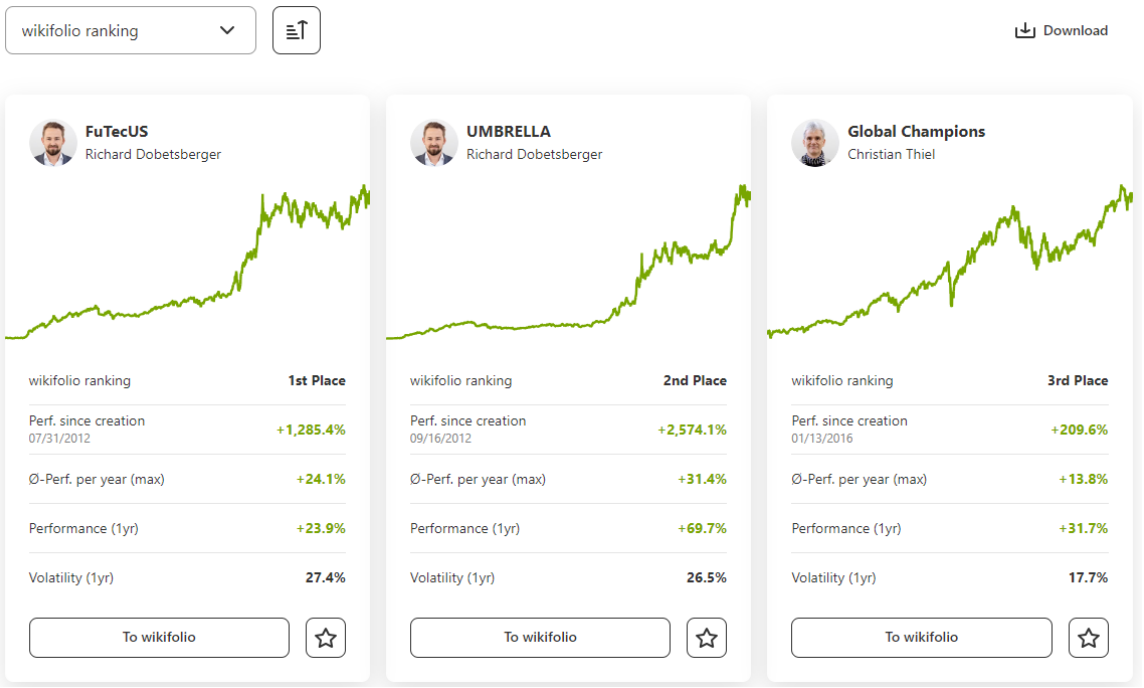
Figure 3: Overview of a trader profile



This overview entails a comprehensive performance overview, the evolution of the portfolio over time, performance comparisons against various benchmarks, an analysis of the average annual return and risk ratio, and a detailed examination of the portfolio's volatility. Furthermore,

the performance fee selected by the trader, the buy/sell ratio, and the invested capital (calculated as the sum of the value of all currently sold index certificates based on the displayed wikifolio) are also displayed. Furthermore, additional tabs are available, displaying the trading idea, details on the portfolio (including equities, performance, and their respective share in the portfolio), key figures summarizing financial indicators, and a record of all trades made in the portfolio.

Figure 4: Ranking system used by *Wikifolio*



The chart shows the three top-rated wikifolios, ranked according to their performance as indicated by their wikifolio ranking. The ranking system places these portfolios in 1st, 2nd and 3rd place respectively, based on various indicators - thirteen in total. Users can filter by ranking to see the ranking of the best portfolios.

Table 1: Ranking criteria and their detailed explanation

Criteria	**Min. Value**	**Max. Value**	**Calculation**
Track record	0	1.5	0 for wikifolio creation 1 after 6 months 1.5 after 2 years
Max loss	0.1	1	0.1 from a maximum loss of over 60 per cent 0.6 - 1 for losses between 60 and 10 per cent (linear) 0.6 - 1 for losses between 60 and 10 per cent (linear)
Last Login	0	1.2	0 after 3 months 1.2 for login today
Trading activity	0	1.2	0 for 5 trades 1 for 25 trades 1.2 for 100 trades
Average monthly return	0	1.5	0 weakest wikifolio 1.5 best wikifolio
Invested Capital	0.25	2	0,25 for no invested capital 1 for EUR/CHF 10.000,- 1.5 for EUR/CHF 100.000,- 2 for EUR/CHF 10.000.000,-
Bestseller (Buy Orders)	1	1.25	1 for rank above 25 1,25 for top 25
Bookmarks	0	1.5	1 if 10 bookmarks 1,5 if 100 bookmarks
Performance last month	0.8	1.3	0,8 weakest wikifolio 1,3 best wikifolio
% Performance since emission	1	1.25	1 if 25 % 1,25 if 50 %
Media Reputation	1	1.25	1 no or average media reputation 1,25 above-average media reputation
Community Activity	1	1.15	1 not provided market reactions to news in the last 7 days 1.15 given market reactions to at least 10 news in the last 7 days
Expert Reputation	1	1.15	1 not received a ‘Like’ for comments in the last 7 days 1.15 received at least 10 ‘likes’ on comments in the last 7 days

This table provides an overview of the criteria used to evaluate the performance and reputation of wikifolio portfolios, with each criterion assigned a specific value range. Factors such as Track Record, Max Loss, and Average Monthly Return assess the financial performance of a portfolio, while criteria like Media Reputation and Community Activity reflect its social influence and engagement within *Wikifolio*. Values are assigned based on different benchmarks, such as the number of trades for Trading Activity or the invested capital for Invested Capital,

providing a comprehensive scoring system. This standardized evaluation allows for a comparative ranking of portfolios, highlighting both quantitative performance metrics and qualitative reputation factors.

II. Methodology, descriptive and explorative statistics

Table 2: Variable description

Dataset	**Description**	**Key variables for analysis**
Social	Contains social metrics, representing the interest and attention a trader receives from the platform's user base.	• **Wikifolio ID:** Unique portfolio identifier, used for merging with other datasets. • **Followers:** Number of followers per portfolio • **Page visits:** Number of page visits a wikifolio gets from users • **Index:** Current rank of a wikifolio, based on 13 criteria, reflecting performance but also social engagement factors
Underlying	Provides details on underlying assets, including asset classifications, to ensure consistency within a specific asset type.	• **ISIN:** Unique identifier for assets, linking them across datasets. **Investment Universe Group**: Asset classification (e.g., "Aktien Europa"), enabling focused analysis within European stocks only. • **Investment Universe:** Specifies the asset focus of each portfolio.
Wikifolio Base	Gives an overview of the Trader on the platform and its respective wikifolios managed.	• **Trader ID:** Unique identifier assigned to each trader on the Wikifolio, allowing the linkage of a trader's individual activity across multiple portfolios • **Wikifolio ID:** Unique identifier for each portfolio, manged by a trader • **Creation Date:** The date when a wikifolio portfolio was first created. • **Publish Date:** The date a wikifolio was made publicly visible on the platform.
Wikifolio Daily	Includes daily performance metrics, capturing short-term fluctuations in portfolio performance essential for understanding DE.	• **Wikifolio ID**: Unique portfolio identifier, used for merging with other datasets. • **Date:** Daily record date, allowing for time-based analysis. • **AUM:** Assets under management, indicating portfolio size. • **Contracts Sold:** Volume of certificates sold. • **Status:** Indicates portfolio stage (e.g., test, published, investable), relevant for controlling public visibility levels.
Wikifolio Item	Provides contextual details for wikifolios, including the current status of the wikifolio along with the quantity and price of its underlying assets.	• **Wikifolio ID:** Unique portfolio identifier, used for merging with other datasets. • **Underlying:** Links each underlyings to its respective wikifolio, giving insights of how much of the asset lays in the portfolio at a given time • **Closing Price**: provides the price of the asset at a given time

Virtual Order	Documents transaction-level data, including buy and sell orders, crucial for calculating trade duration and observing DE. Used to calculate trade duration	• **Wikifolio ID:** Unique portfolio identifier, used for merging with other datasets. • **Underlying:** Links each underlyings to its respective wikifolio, giving insights of what is done with that asset within the portfolio **Execution Date:** Date and exact time of each trade execution, essential for calculating holding duration. • Underlying Quantity: How much of the asset was traded **Order Direction:** Indicates buy or sell, used to identify completed trades for DE measurement. • **Order Execution Price:** Shows the price at which underlying was traded. • **Realized Gain**: Shows the gain or loss made on the asset when sold.

Table 3: Parametric measures before cleaning

	n	mean	sd	median	min	max	range	skew	kurtosis
UnderlyingQuantity	283859	4109.715	465492.605	20.000	0.001	120000000.00	120000000.00	194.700	41723.382
OrderExecutionPrice	283859	97.173	1242.563	35.980	0.001	476500.00	476500.00	359.843	133762.927
RealisedGainUnderlying	283859	6.890	121.731	0.918	-99.926	15828.78	15928.70	76.370	7183.178
Duration	283859	106.102	96.909	76.000	0.000	579.00	579.00	0.874	-0.242
FollowersWikifolio	283859	24631.818	67066.054	1007.000	8.000	699653.00	699645.00	4.514	25.080
DetailPageVisitsWikifolio	283859	6960.614	18539.940	795.000	1.000	170236.00	170235.00	4.618	25.520
CommentLikesTrader	283859	140.140	419.395	0.000	0.000	7372.00	7372.00	5.292	33.816
Aum	283859	857347.732	3215058.354	11879.418	0.000	39145318.80	39145318.80	7.608	75.095
ContractsSold	283859	2845.461	8419.566	138.879	0.000	72744.63	72744.63	4.906	28.473
CashAccountCurrentBalance	283859	135078.496	1229980.979	18968.370	-998874.745	41888589.16	42887463.90	21.596	522.945
TopWikifoliosIndex	283859	3100.336	3638.831	1882.000	4.000	31547.00	31543.00	2.010	5.355
Quantity	283859	25264.306	592586.367	209.430	0.254	45078750.00	45078749.75	26.188	740.020

Figure 5: Boxplot before cleaning

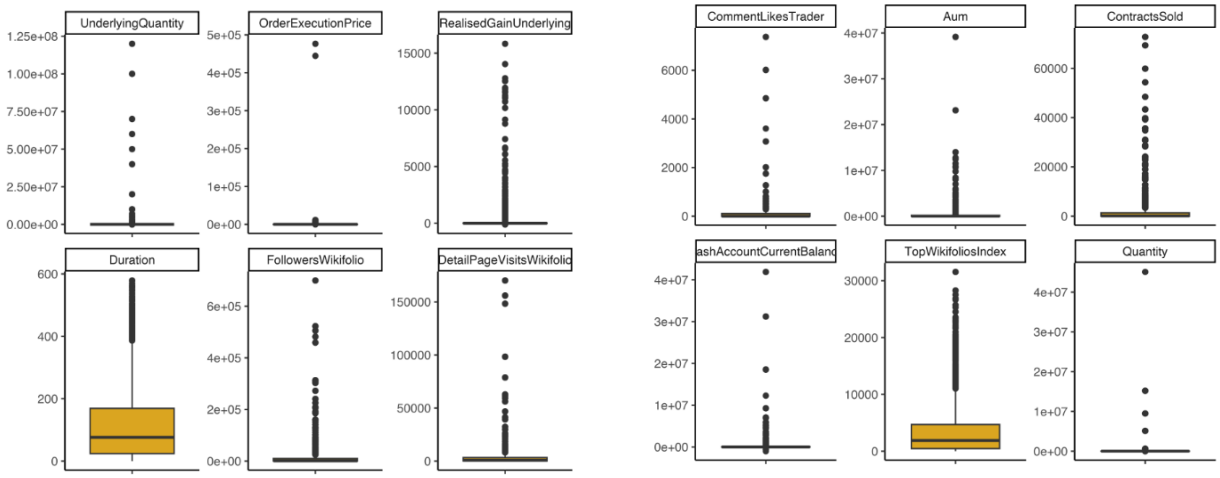
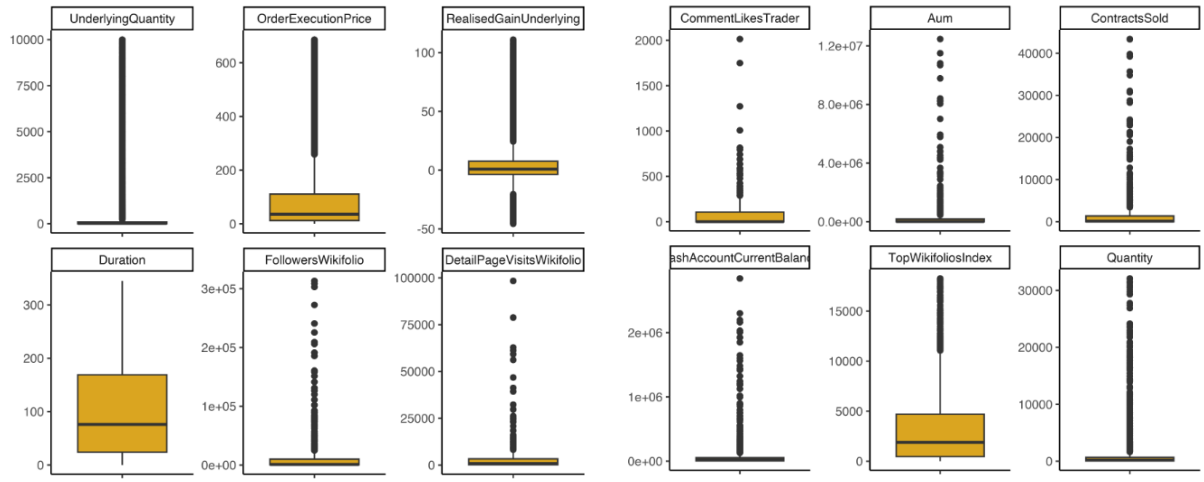


Table 4: Parametric measures after cleaning

	n	mean	sd	median	min	max	range	skew	kurtosis
UnderlyingQuantity	283859	327.295	1249.868	20.000	1.000	10000.000	9999.000	6.250	41.912
OrderExecutionPrice	283859	86.646	121.909	35.980	0.587	685.884	685.297	2.549	7.487
RealisedGainUnderlying	283859	3.917	20.295	0.918	-45.577	111.061	156.638	2.223	9.680
Duration	283859	105.949	96.468	76.000	0.000	345.000	345.000	0.850	-0.353
FollowersWikifolio	283859	22997.643	56683.067	1007.000	106.000	313230.000	313124.000	3.319	11.348
DetailPageVisitsWikifolio	283859	6705.515	16798.401	795.000	53.000	98368.000	98315.000	3.864	15.827
CommentLikesTrader	283859	130.274	354.215	0.000	0.000	2014.000	2014.000	4.255	18.066
Aum	283859	731211.564	2151161.584	11879.418	0.000	12465499.693	12465499.693	3.913	15.454
ContractsSold	283859	2688.941	7362.106	138.879	0.000	43377.715	43377.715	3.987	16.647
CashAccountCurrentBalance	283859	82309.432	302486.239	18968.370	-121.629	2842489.886	2842611.515	8.014	68.372
TopWikifoliosIndex	283859	3078.197	3533.456	1882.000	8.000	18257.000	18249.000	1.770	3.492
Quantity	283859	1436.607	4226.699	209.430	4.875	32091.107	32086.232	5.439	33.033

Figure 6: Boxplots after cleaning with 1% winsorization



The detailed examination of Tables 3 and 4, along with Figures 5 and 6, offers a good understanding of the statistical characteristics of important variables of the dataset, both numerically and visually.

Before data cleansing, the realized gains in Table 3 showed high maximum values for realized gains which could indicate unusually profitable transactions. The corresponding boxplots in Figure 5 visualised these extreme values as points that were far above the upper whisker. After winsorisation, the data in Table 4 and the adjusted boxplots in Figure 6 show a clear

improvement in the extremes, which enables a more even distribution of profits and a more realistic representation of financial returns.

Furthermore, the duration of the transactions or investments, originally with extreme outliers of up to 600 days, was normalised through a 1% winsorisation. The new boxplots show a smaller range with fewer extreme outliers.

One of the key variables of the dataset, namely followers and page visits, showed a high number of outliers in the boxplots, indicating a few very popular wikifolios. The boxplots after cleaning show a significant reduction in these outliers, resulting in a more even distribution of engagement across multiple portfolios.

The values for AUM are extremely high, showing that some accounts had unusually large sums. The associated boxplots in Figure 5 confirmed this with data points well above the normal range. Winsorisation has reduced these extreme values. In Table 4, the maximum values are much lower, showing that the data is now more evenly distributed. The boxplot in Figure 6 now shows that the extremely high AUM values have been capped and the new distribution is more compact.

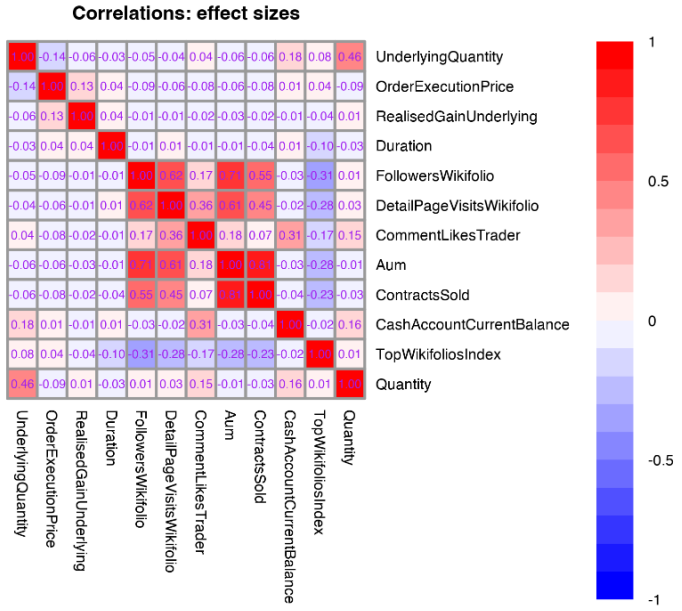
The prices at which orders were executed showed a wide dispersion of extremely high values before the cleaning, which could indicate exceptional market conditions or errors in the data. Winsorisation effectively reduced the range and number of outliers in the boxplots and provided a more realistic representation of transaction prices.

Table 5: Overview per wikifolio status

Status	N	Freq
Investable	264763	0.9327272
Published	13936	0.0490948
Test	2385	0.0084021
IssuingRequested	2262	0.0079687
PublishingRequested	278	0.0009794
ReadyForIssuing	235	0.0008279

This provides an overview of the various wikfolio statuses. The main focus is on the first three phases shown in the table, as they occur most frequently. The most common status is 'investable', i.e. the most mature phase, with 93% of occurrences in the dataset, followed by around 5% 'published' and less than 1% in the test phase. This indicates that most of the wikifolios present in the dataset are already investable products.

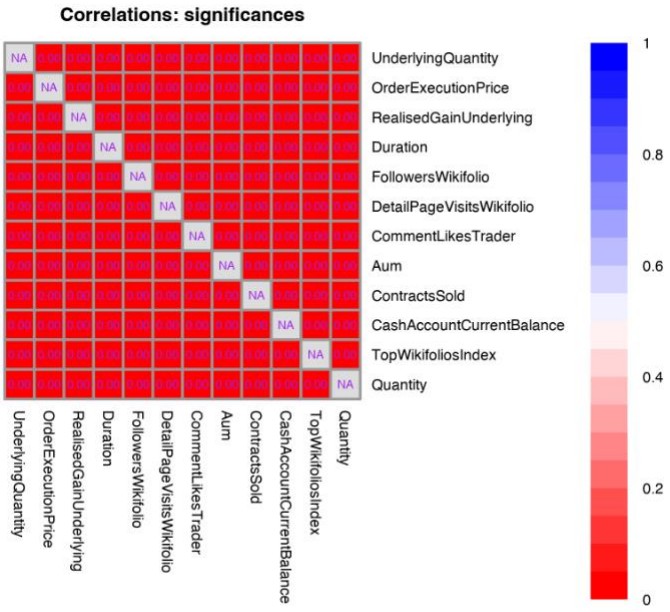
Figure 7: Heatmap of correlation significance levels between variables, highlighting statistically significant relationships



This heatmap presents the effect sizes of correlations between key metrics in the dataset, where colors indicate the strength and direction of each relationship. The color scale ranges from -1 (strong negative correlation, in blue) to +1 (strong positive correlation, in red). Notable high

positive correlations include AUM with Contracts Sold (0.81), FollowersWikifolio with AUM (0.71), and DetailPageVisitsWikifolio with FollowersWikifolio (0.62). These associations suggest that as a wikifolio's assets under management increase, the number of sold contracts also rises, potentially reflecting higher investor interest in popular wikifolios.

Figure 8: Correlation Significance Matrix for Key Metrics



This figure shows the significance levels of the correlations between different metrics within the data set. The colour gradient from red to blue indicates the p-values, where red stands for highly significant correlations (p-values close to 0), indicating a statistically significant relationship between pairs of variables. Cells labelled ‘NA’ indicate inapplicable correlations, typically diagonal cells or cases where the data was insufficient for calculation. This matrix can be used to determine which relationships are statistically robust and merit further investigation as part of the analysis of the DE. In this case, the red values imply that the majority of correlations in this dataset are statistically significant, which suggests that the relationships observed in the correlation heatmap are unlikely to be due to random chance. This gives further credibility to

interpreting these relationships, especially for key variables like followers, page visits, AUM and Contracts Sold that showed higher correlations in the effect size heatmap.

III. Empirical results

Table 6: Regression results disposition effect on *Wikifolio*

```
Residuals:
    Min      1Q  Median      3Q     Max
-192.63  -81.30  -29.18   63.80  236.20

Coefficients:
                        Estimate Std. Error t value Pr(>|t|)
(Intercept)             109.2022     0.1831   596.5   <2e-16 ***
RealisedGainUnderlying -185.2402     9.1695   -20.2   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 96.06 on 275812 degrees of freedom
Multiple R-squared:  0.001477,    Adjusted R-squared:  0.001474
F-statistic: 408.1 on 1 and 275812 DF,  p-value: < 2.2e-16
```

There is a highly statistically significant DE at all conventional levels (p <0.001).

Table 7: Regression result Hypothesis 1 (Page visits)

```
Residuals:
    Min      1Q  Median      3Q     Max
-197.99  -81.23  -28.98   63.39  236.60

Coefficients:
                                                Estimate Std. Error t value
(Intercept)                                    1.088e+02  1.970e-01 552.266
RealisedGainUnderlying                        -1.845e+02  1.016e+01 -18.153
DetailPageVisitsWikifolio                      6.092e-05  1.093e-05   5.573
RealisedGainUnderlying:DetailPageVisitsWikifolio -1.044e-04  5.564e-04  -0.188
                                               Pr(>|t|)
(Intercept)                                     < 2e-16 ***
RealisedGainUnderlying                          < 2e-16 ***
DetailPageVisitsWikifolio                      2.5e-08 ***
RealisedGainUnderlying:DetailPageVisitsWikifolio    0.851
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 96.05 on 275810 degrees of freedom
Multiple R-squared:  0.00159, Adjusted R-squared:  0.001579
F-statistic: 146.4 on 3 and 275810 DF,  p-value: < 2.2e-16
```

No significant effect of page visits (p = 0.851). in its interaction with gains. However, page visits significantly correlate with longer holding durations (Estimate = 0.000061, p < 0.001).

Table 8: Regression result Hypothesis 2 (Followers)

```
Residuals:
    Min      1Q  Median      3Q     Max
-199.26  -81.31  -29.25   63.70  237.56

Coefficients:
                                          Estimate Std. Error t value
(Intercept)                               1.093e+02  1.974e-01 554.014
RealisedGainUnderlying                   -1.995e+02  1.037e+01 -19.232
FollowersWikifolio                       -5.725e-06  3.259e-06  -1.757
RealisedGainUnderlying:FollowersWikifolio  3.332e-04  1.128e-04   2.955
                                         Pr(>|t|)
(Intercept)                               < 2e-16 ***
RealisedGainUnderlying                    < 2e-16 ***
FollowersWikifolio                        0.07899 .
RealisedGainUnderlying:FollowersWikifolio 0.00313 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 96.06 on 275810 degrees of freedom
Multiple R-squared:  0.001519,    Adjusted R-squared:  0.001508
F-statistic: 139.9 on 3 and 275810 DF,  p-value: < 2.2e-16
```

The interaction term between followers and realized gains significant (Estimate = 0.00033, p = 0.00313), suggesting that a reduced DE is associated with higher follower count. The direct effect of followers on the duration is negative and marginally significant (Estimate = -0.0000057, p = 0.079).

Table 9: Regression result Hypothesis 3 (AUM)

```
Residuals:
    Min      1Q  Median      3Q     Max
-199.95  -81.33  -29.11   63.61  237.40

Coefficients:
                            Estimate Std. Error t value Pr(>|t|)
(Intercept)                107.93413    0.44113 244.678  < 2e-16 ***
RealisedGainUnderlying    -164.21106   22.69044  -7.237  4.6e-13 ***
Aum                          0.13783    0.04363   3.159  0.00158 **
RealisedGainUnderlying:Aum  -2.13851    2.09413  -1.021  0.30716
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 96.06 on 275810 degrees of freedom
Multiple R-squared:  0.001517,    Adjusted R-squared:  0.001506
F-statistic: 139.6 on 3 and 275810 DF,  p-value: < 2.2e-16
```

The interaction term between AUM and realized gains is not significant, suggesting that there is no relationship between higher AUM and a reduced DE on Wikifolio. The direct effect of AUM on holding duration is positive and significant (Estimate=0.137, p=0.00158). This means that higher invested is correlated with reduced holding durations.

Table 10: Regression results Hypothesis 4 (Ranking)

```
Residuals:
    Min      1Q  Median      3Q     Max
-243.92  -79.97  -27.94   62.61  280.10

Coefficients:
                                          Estimate Std. Error t value
(Intercept)                               1.183e+02  2.417e-01  489.32
RealisedGainUnderlying                   -2.782e+02  1.179e+01  -23.60
TopWikifoliosIndex                       -2.926e-03  5.158e-05  -56.72
RealisedGainUnderlying:TopWikifoliosIndex  2.724e-02  2.512e-03   10.84
                                         Pr(>|t|)
(Intercept)                                <2e-16 ***
RealisedGainUnderlying                     <2e-16 ***
TopWikifoliosIndex                         <2e-16 ***
RealisedGainUnderlying:TopWikifoliosIndex  <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 95.48 on 275810 degrees of freedom
Multiple R-squared:  0.01344, Adjusted R-squared:  0.01343
F-statistic:  1253 on 3 and 275810 DF,  p-value: < 2.2e-16
```

The Interaction between ranking and realized gains is significant ($p < 0.001$) and the direct effect of Ranking on the holding time is negative and significant (Estimate = -0.0029, $p < 0.001$).

Table 11: Robustness check results wikifolio status

```
Residuals:
    Min      1Q  Median      3Q     Max
-198.23  -80.22  -28.20   63.68  271.73

Coefficients:
                                                Estimate Std. Error t value
(Intercept)                                     111.2373     0.1890 588.675
RealisedGainUnderlying                         -193.0693     9.3789 -20.585
StatusIssuingRequested                          -31.9697     2.1148 -15.117
StatusPublished                                 -28.5968     0.8433 -33.911
StatusPublishingRequested                       -34.0407     5.8973  -5.772
StatusReadyForIssuing                           -31.5562     6.3801  -4.946
StatusTest                                      -37.9686     1.9847 -19.130
RealisedGainUnderlying:StatusIssuingRequested   127.7208   100.4359   1.272
RealisedGainUnderlying:StatusPublished          128.3762    49.0410   2.618
RealisedGainUnderlying:StatusPublishingRequested 111.5969  394.2520   0.283
RealisedGainUnderlying:StatusReadyForIssuing   -395.9967   388.7989  -1.019
RealisedGainUnderlying:StatusTest               195.2802   134.8885   1.448
                                               Pr(>|t|)
(Intercept)                                     < 2e-16 ***
RealisedGainUnderlying                          < 2e-16 ***
StatusIssuingRequested                          < 2e-16 ***
StatusPublished                                 < 2e-16 ***
StatusPublishingRequested                      7.83e-09 ***
StatusReadyForIssuing                          7.58e-07 ***
StatusTest                                      < 2e-16 ***
RealisedGainUnderlying:StatusIssuingRequested   0.20349
RealisedGainUnderlying:StatusPublished          0.00885 **
RealisedGainUnderlying:StatusPublishingRequested 0.77713
RealisedGainUnderlying:StatusReadyForIssuing    0.30844
RealisedGainUnderlying:StatusTest               0.14770
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 95.76 on 275802 degrees of freedom
Multiple R-squared:  0.00778, Adjusted R-squared:  0.00774
F-statistic: 196.6 on 11 and 275802 DF,  p-value: < 2.2e-16
```

The results indicate that the Published phase reduces DE compared to test phase (Estimate = 128.38, p = 0.00885), but Investable phase shows the strongest reduction (Estimate = -193.07, p < 0.001).

Table 12: Summarized view of results

Hypothesis	**Key variables**	**Result**	**Interpretation**
H1: Increased page visits reduce DE	Page visits, Realized Gains	Interaction with realized gains not significant ($p = 0.851$). Page visits significantly correlate with longer holding durations (Estimate = 0.000061, $p < 0.001$).	Page visits encourage longer holding durations, reflecting subtle social scrutiny. However, they do not directly impact DE.
H2: Higher number of followers reduces DE	Followers, Realized Gains	Interaction term between followers and realized gains significant (Estimate = 0.00033, $p = 0.00313$). Direct effect of Followers marginally significant ($p = 0.079$).	A higher follower counts reduce the DE by encouraging rational decision-making under public scrutiny. Traders with more followers exhibit less dispositional behavior over time.
H3: Higher AUM is associated with reduced DE	AUM, Realized Gains	Interaction term between AUM and realized gains is not significant. Positive coefficient for AUM on duration (Estimate = 0.13788, $p = 0.00158$).	No significant impact of AUM on reducing DE.
H4: Higher rankings reduce DE	Ranking, Realized Gains	Interaction between ranking and realized gains highly significant (Estimate = 0.027, $p < 0.001$). Direct effect of ranking on duration negative and significant (Estimate = -0.0029, $p < 0.001$).	Higher rankings reduce DE through increased visibility and public scrutiny, encouraging rational trading behaviors.