

Gender Diversity: An Empirical Study on 4.151 US Investment Funds

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Abstract: The aim of this paper is to explore the issue of gender diversity (GD) in relation to the world of investment funds. In recent times, in fact, savers' choice does not only converge on the mere pursuit of profit. Investment funds, in this scenario, are increasingly judged according to their environmental and ethical actions, and not just by the promised rewards. Individual and institutional investors, on this wake, are aligning their behavior with their values by taking responsibility for the investments they select. It is central, therefore, to understand and observe how issues such as GD are evaluated, managed and converted into rating values by funds. This paper is supported by a mixed research methodology involving, on the one hand, an in-depth literature review on the aforementioned topic and, on the other hand, a statistical study developed with the "R-Studio" program. Through the statistical derivation, this study proposes an analysis of histograms and scatter plots on a sample of 4.151 investment funds and the GD-related rating judgments compared with their net assets and longevity. Based on our findings, funds with higher net assets achieve high rating classes but not excellence. In fact, larger funds reside in lower rating classes. Similarly, it is also valid for the amount of capital managed by the funds. From the empirical evidence we provide, it can also be seen that, there is no evidence between GD rating category and youngest funds longevity. Filling a gap that exists in the literature on GD-related rating assessment in investment funds, the originality of this paper concerns the descriptive statistics proposed. In fact, the paper contributes to the literature on GD by enriching the analysis of the factors surveyed for its measurement and rating judgment. This study may have both theoretical and practical implications. From a practical perspective, the statistical evidence in this paper could be a guideline for practitioners oriented toward ethical and profitable investment choices. From a theoretical point of view, instead, GD evaluation and monitoring could be a tool to reduce problems related to transparency and legitimacy theory, mitigating information asymmetry between parties and aligning them on potential risks.

Keywords: Gender Diversity, Investment Funds, Corporate Social Responsibility (CSR, Environmental, Social, Governance (ESG)).

Paper type: Academic Research Paper

1. Introduction

The link between GD and mutual funds is, internationally, constantly growing and expanding. In accordance with the literature reviewed, many factors intervene to foster this binomial.

Among the main ones we certainly find the new international normative momentum that is increasingly focused on sustainable and ethical solutions. Indeed, one of the clear goals of the UN Agenda 2030 is to achieve gender equality in support of women and girls who are victims of sex discrimination. To make this goal a reality, through the synergistic work of legislators, policies aimed at women's gender inclusion in business settings are evolving.

In parallel, the increasing focus on environmental and ethical aspects has fostered the development and implementation of benchmark metrics that can render numerical evidence to support all stakeholders. Indeed, ESG metrics, through their three pillars, aim to assess sustainability and ethics in all their components. Among the many, a certainly thick role is played by gender diversity.

In reference to the above, however, we found a gap in the literature that numerically links GD to investment funds. Specifically, we found a difficulty in finding information linking characteristics of investment funds (mainly: Net Asset and longevity) to the rating judgment linked to GD. Indeed, in our view, this type of empirical evidence is not marginal, but rather, can direct important reflections on the behavior of funds with respect to GD.

Our goal, which we make explicit in our research questions (RQs), is to help to fill this gap by going to explore the relationship between gender diversity-related ratings and some basic characteristics of investment funds.

The implications of the results we present are both theoretical and practical. On the theoretical side, we contribute to the development of the theme linking investment funds with GD-related rating, offering a statistical cue that could be implemented or used with new databases. On the other hand, from a practical point of view, this study can be a model for more informed choice for both investors and fund managers.

2. Literature Review

2.1 GD in Investment Funds

The academic literature, driven by the growing focus on sustainability and ethics, has analyzed the role of GD related to the investment funds (Aggarwal & Boyson, 2016). Investment funds, in fact, are a growing reality as a solution for investors, who are increasingly oriented toward sustainable and ethical solutions to support the pursuit of profit (Kaufmann, 2022). Trying to investigate the causes that, especially in recent times make this relationship so close, we identified two possible causes, in agreement with the international literature reviewed.

First, the regulatory level is certainly relevant. In fact, the international context is imposing laws and regulations aimed at encouraging good sustainable and ethical standards (Tettamanzi et al., 2022). Among the main aspects, the object of attention of legislators and standard setters, is also gender equality in corporate realities.

A clear example, at the international level, is certainly SDG 5 “Achieve gender equality and empower all women and girls”. Specifically, closely related to our research topic appears to be goal 5.5 enacted by the UN: “*Ensure women’s full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life*” (UN, the 2030 Agenda for Sustainable Development).

What has just been expressed finds application, not only in the goals made explicit by the UN, but also in the normative implication of quantitative ethics assessment.

We refer specifically to the Environmental, Social and Governance pillars where GD is placed in the last pillar (Strine et al., 2022). The “G” component often overlooked compared to its sisters “E” and “S”, is becoming more central than ever in the intervention logics of legislators and the main standard setters. This framework, in fact, presents numerous evidence with respect to the harmonization efforts between the European Financial Reporting Advisory Group (EFRAG) and the International Sustainability Standards Board (ISSB) on the issues of sustainability and ethics in their accounting and CSR-related expression (Hummel & Jobst, 2022).

Parallel to the regulatory framework, there is another aspect that links GD to investment funds. The close connection of this link, in fact, is also the result of the ever-increasing attention of investors not only to environmental issues, but at the same time, also to ethical issues in the choice of investment solutions. If before, in fact, the attention of the subjects who allocated their savings to professional subjects (investment funds) was directed to the mere pursuit of profit, we can say today that this trend has changed (Döttling & Kim, 2022; Sorrosal- Forradellas et al., 2023). In fact, more and more subjects, in addition to seeing the expected returns of the funds, inform themselves about the rating judgments issued by third parties in reference to sustainability and ethics (Abate et al., 2021). This, as will be evident, also simultaneously directs the managerial choices of the funds. These realities, in fact, are gradually understanding how these aspects are far from being marginal, but on the contrary, increasingly valued as critical success factors to stand out from the fierce competition (Babalos et al., 2015).

The international literature, in explaining the link between investor expectations together with disclosure linked to sustainability and ethics, seems to agree in using the theoretical framework constituted by legitimacy theory as a basis of scientific evidence. Based on these reflections, we summarize this theory in the following paragraph, where we also delve into the topic of CSR in its direct relationship with the topics covered. This logical thread directs our RQs, to which we subsequently respond using the evidence collected in the empirical analysis.

2.2 Legitimacy Theory

According with the most popular research stream, the legitimacy theory is defined as: “[...] *a mechanism that supports organizations in implementing and developing voluntary social and environmental disclosures in order to fulfil their social contract that enables the recognition of their objectives and the survival in a jumpy and turbulent environment [...]*” Archel et al. (2009, p. 4).

According to the legitimacy theory, in fact, organizations (both private and public ones) should not only focus on meeting investors’ expectations. Instead, they should consider the rights of the environment and social sphere (Suchman, 1995). In their study Joshi et al. (2011) also state that organizations should try to create a strong alignment between the social value they provide through their actions and the expected norms of behavior.

The theory of legitimacy, as stated, is a concept that connects organizations to the field of CSR in its link with sustainability and ethics. This principle suggests that organizations strive to maintain a positive image and gain

social acceptance by aligning their activities with socially valued norms and expectations. In other words, a company tries to satisfy the needs of the community through activities that the social context deems correct, therefore, moving away from the logic of practicing only what is legally required or considered profitable. Legitimacy theory is not limited to appearances; its ultimate objective is, in fact, to create an authentic link between the company and society, i.e., based on trust and sincere commitment to social responsibility.

Based on what has been stated, therefore, investing in an efficient and effective CSR is currently necessary both to align with the new regulatory parameters and to satisfy the new preferences of investors (Cheng et al., 2023). At the same time, in line with what is expressed by the legitimacy theory, it is necessary to aim to create value in order not to pursue the mere reputational and economic return, also with respect to the topic of GD.

2.3 CSR in Investment Funds

Over the last twenty years, a substantial number of academics have focused on defining CSR, in its connection with investment realities, as the voluntary integration of social and environmental issues in the operations carried out by fund managers for the direct benefit of the interaction with all stakeholders (Birindelli et al., 2019; Cheng et al., 2023).

According to Cheng et al. (2023), in fact, CSR would create a positive system by increasing transparency and reliability on the reporting of social and environmental impact in reference to disseminated data. This graft, in parallel, can modify the internal control system by improving regulatory compliance, reporting reliability and reducing information asymmetry between the company and investors. The benefit, therefore, would be connected to greater competitiveness due to a better reputation, as a direct consequence of a better corporate culture (Arduini et al., 2023). In investment funds, this translates into greater ease in raising capital from investors (El Ghoul et al., 2011).

CSR, however, presents considerable difficulties with respect to its determination and implementation. In fact, it appears to be a very complex and difficult system to integrate within the company as an expression of greater culture and transparency due to various activities such as: attention to the environment, equity, cultural heritage, education, health, energy saving, correct advertising information and human rights. These objectives, clearly, also find expression on the topic of GD.

Among the points analyzed, the representation of women in companies is a topical and reflective argument, and at the same time, it is considered as a gap to be filled to combat discrimination within companies. Specifically, in relation to the financial world, the role of women is even more important, especially to promote more prudent, ethical and sustainable management as a way to control some risks (such as reputational one) (Birindelli et al., 2019). Other scholars, with reference to the world of investments, state that gender equality (in managerial and top management roles) can ensure less aggressive and more conservative choices (Palvia et al., 2015). In addition, studies on corporate governance show that gender equality in positions such as CEO, BoD's president and non-executive directors are directly linked to better performance (Akomea-Frimpong et al., 2022; Aksoy & Yilmaz, 2023).

For all these reasons, an efficient and effective CSR cannot ignore care and attention to the letter "G", as well as certainly to all good practice policies in business conduct (Rau & Yu, 2023). This certainly applies to investment funds since they are a reality that responds very strongly to the needs of the market, as well as to the needs of the community that surrounds them. CSR and GD, in fact, are very closely linked in the productive world, constituting a commitment to creating a more inclusive and fair working environment (Wu et al., 2022).

According to Wu et al. (2022), companies that support gender diversity often naturally align with CSR initiatives. In fact, when a company values diversity, it tends to extend this commitment to broader social responsibilities. Furthermore, by promoting an inclusive environment, companies contribute to social progress, perfectly aligning with the essence of CSR (Campbell & Mínguez-Vera, 2008). When companies take a leadership role in promoting gender diversity, they set an example that goes beyond their walls, becoming a wave effect that leads to better performance (Bernile et al., 2018).

Many studies, among which we report that of Cheng et al. (2023), however, questioned the actual relationship between CSR actions and the financial performance linked to them. It is therefore our intention, in line with the objectives of our study, to investigate what kind of relationship exists between GD and the quantitative measurement of some key parameters in investment funds.

The link between GD and investment reality, in fact, is more than ever the subject of efforts in its development and implementation (Calder-Wang & Gompers, 2021). However, according to the academic literature analyzed, its economic return is often difficult to evaluate and, very often, this aspect is overlooked in studies (Babalos et al., 2015). These reflections guided our research questions, specifically:

- RQ1: How GD, as an expression of CSR, is valued within investment funds?
- RQ2: What is the relationship between Fund Net Asset and the rating associated with GD?
- RQ3: What is the relationship between fund longevity and GD rating?

3. Methodology

3.1 Database

The model database, the “Gender Equality Funds” made by “AS You Sow”, provides information on thousands of mutual funds most held in the U.S. To feed this database, two data sources are simultaneously combined: company gender equality data from Equileap and mutual fund holdings data from Morningstar.

As regards the first factor of analysis, it is appropriate to mention the Equileap Gender Equality Scorecard, inspired by the UN’s Women Empowerment Principles. Based on this indicator, provided by Equileap, each fund is evaluated based on 19 criteria (among the main ones: gender balance across the workforce, the gender pay gap, paid parental leave and anti-sexual harassment policies). The 19 classes are subsequently incorporated into four categories which, depending on the topic covered and the percentage relevance attributed, participate in generating a gender equality score from 0 to 100 for the target fund:

- Gender balance in leadership and workforce (40/100);
- Equal compensation and work life balance (30/100);
- Policies promoting gender equality (20/100);
- Commitment, transparency, and accountability (10/100).

In parallel with Equileap’s ratings, the financial information in the database is provided by Morningstar in relation to thousands of US open-end investment funds and ETFs. Also in this case the multiple classes of information are grouped into four main categories:

- Allocation Funds;
- International Equity Funds;
- Sector Equity Funds;
- U.S. Equity Funds.

Specifically, Morningstar provides quantitative data that allows the user to create a scoring mapping of funds. The score combines research into which companies are involved and which companies invest in the funds to assess how exposed they are to different types of environmental and social investment risks. Based on this, therefore, it is possible to label socially and ethically responsible funds from funds that are not through a simple index: A, B, C, D and F (where A is the highest class).

3.2 Composition of the Sample

The database, consisting of 12.736 funds, was reduced and “cleaned” in Excel according to the logic we present. In fact, not all the information was considered useful by us for the purposes of our research.

In reference to the information regarding the ownership of the fund, in fact, we reduced the sample from 12.736 to 4.151 funds analyzed. The funds eliminated from the study, as highlighted by the database, do not have their own fund net asset and, therefore, correspond in all respects to sub-categories belonging to the main funds. Duplicating, tripling or, sometimes, quadrupling the list of funds belonging to the same ownership, and which did not contribute their own fund net assets, was completely irrelevant for our statistical investigations.

In addition to this, to make the comparison of data in “R-Studio” easier, also using scatter plots and histograms, we decided to numerically convert the “Gender Equality grade” judgment expressed alphabetically. Below is the simple conversion table showing the rating judgment given by Equileap, where A and its corresponding 1 correspond to the highest rating values.

Table 1: “Gender Equality grade” conversion table

ORIGINAL RATING		NEW RATING
A	B	1
B		2
C		3
D		4
F		5

Following these changes, the Excel sheet containing the processed database was exported to “R-Studio” to conduct the statistical analysis.

3.3 Analysis of the Sample

As the first element of study, expressed in the scatterplot in *Figure 1*, we decided to study the relationship between two variables offered by the database: “Gender Equality grade”, converted numerically as explained in the previous paragraph, and the “Fund Net Asset” expressed in \$Million. By linking these two variables on “R-Studio” and coding a specific string that returns a scatter plot, it is possible to observe how the 4.151 funds examined are distributed in space. Thanks to this type of scatter plot, in fact, it is possible to determine the intensity of a relationship between two numerical variables. The x-axis, specifically, represents the independent variable and the y-axis represents the dependent variable.

After studying the distribution calculated in reference to the “Gender Equality grade” and the “Fund Net Asset”, we decided to convert the coding string on “R-Studio” into a histogram. The intention, in line with the statistical tool used, is to observe the quantity of “Fund Net Asset” for each individual category of “Gender Equality grade” (*Figure 2*).

Finally, as the last aspect of our statistical analysis, we focused on studying the correlation between “Shareclass Inception Date” and “Gender Equality grade” (*Figure 3*). Our objective, in fact, is to observe what type of correlation exists between the youngest (or not-so-young) funds and the rating level on the issue of gender equality. Also in this case, to arrive at our statistical conclusions we used the scatter plot on “R-Studio”.

4. Empirical Analysis and Results

From what emerges from *Figure 1*, it is possible to note that the distribution of investment funds, classified by size, is very broad and poorly distributed in relation to the five rating levels. We can, however, find similarities between some classes.

The first analogy that is evident is that, with reference to classes 4 and 5, funds that are smaller in size are assessed with a lower rating level. In fact, in neither of these two classes do we find evidence of medium-large sized investment funds. Another interesting analogy can be seen between class 3 and class 1. These two classes, in fact, collect funds that are very similar in size. Their nature, as shown in *Figure 1*, is predominantly small and only for a small percentage of funds corresponds to an average size.

The data that is most relevant is certainly linked to class 2. This class, in fact, is the only one that collects medium funds and large funds uniformly distributed in the graph.

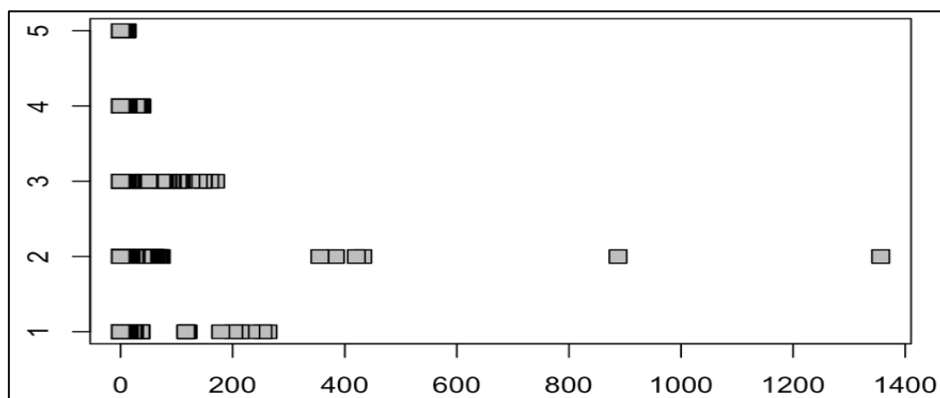


Figure 1: Correlation between Fund net assets and Gender Equality grade

(source: Authors)

In conclusion, once the graph in *Figure 1* has been analyzed, it is possible to arrive at the following conclusion: the 4.151 investment funds analyzed follow a linear trend when studied in reference to size and gender rating. It is clear, therefore, that smaller funds that are less attractive to investors have lower rating results. On the contrary, medium funds and the largest funds record a very high rating result (grade 2), although not the highest. Finally, small-medium funds ensure positive and fluctuating rating results. This is the case, in fact, of funds that are distributed between classes 1 and 3.

Moreover, the data portrayed in *Figure 2* serves as a crucial companion to *Figure 1*, offering a nuanced perspective on the interplay between fund size, gender rating, and financial magnitude. The histogram's delineation of rating categories against total Fund Net assets not only corroborates the trends identified earlier but also unveils intriguing nuances within specific asset brackets. For instance, a closer examination reveals that within the medium-sized fund category, there exists a divergence in rating outcomes, suggesting a dynamic landscape even within a seemingly homogeneous group.

Furthermore, the visual representation in *Figure 2* facilitates a more comprehensive evaluation of the funds that defy the expected linear trend. These outliers may hold the key to uncovering unique strategies or characteristics that contribute to their exceptional performance or, conversely, their deviation from the anticipated rating norms. The histogram that we present, as stated, shows the usual five rating categories on the y-axis, while on the total Fund Net assets expressed in billions (10^9).

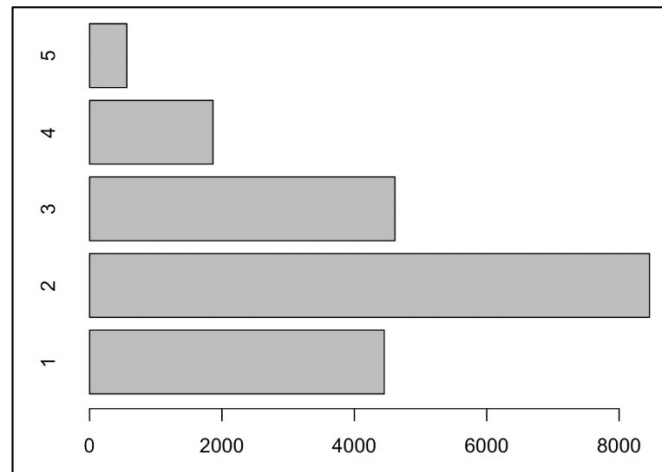


Figure 2: Fund net assets for each Gender Equality grade class

(source: Authors)

It's quite fascinating to observe how the dynamics of fund net assets align with the established trends within each rating class. Notably, the lower-rated classes (4 and 5), exhibit a propensity to attract comparatively less capital when compared to their higher-rated counterparts. This underscores the influence of ratings on investor confidence and capital allocation.

Delving deeper into the nuances revealed by *Figure 2*, it's intriguing that classes 1 and 3 emerge as nearly indistinguishable in terms of average capital accumulation. This parity suggests a certain equilibrium or commonality in the fundraising capabilities of these classes. Meanwhile, class 2 stands out prominently by securing the highest average capital among all classes. This not only positions it as a formidable contender in terms of size but also establishes it as the wealthiest class, a noteworthy insight gleaned from the juxtaposition of *Figures 1* and *2*.

The comprehensive analysis extends to the scatter plot in *Figure 3*, which serves as the culmination of our empirical investigation. The y-axis neatly accommodates the familiar five rating classes, while the x-axis charts the years of activity for the funds. This visual representation provides a holistic view of the temporal dimension, allowing us to discern potential patterns or trends that may influence the performance of funds over time. By integrating this temporal perspective into our analysis, we gain valuable insights into the longevity and sustainability of fund activities across different rating classes, enriching our understanding of the broader financial landscape.

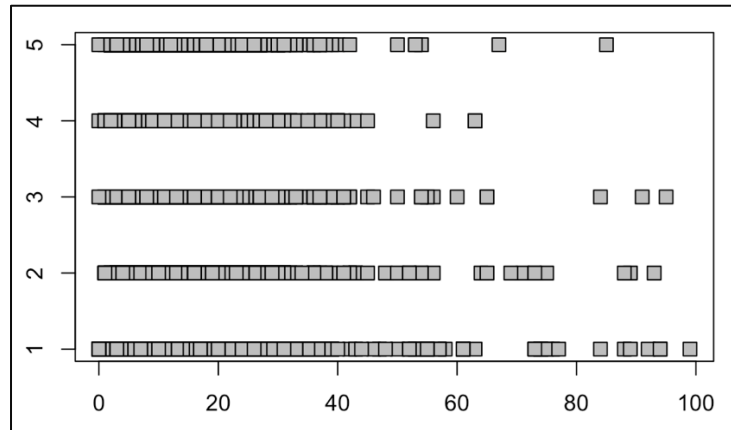


Figure 3: Correlation between Shareclass Inception date and Gender Equality grade

(source: Authors)

Visually examining the distribution of funds across the first three classes reveals a remarkably balanced spread. This implies that, within the analyzed sample, the age of funds doesn't significantly correlate with favorable rating judgments (classes 1-3). This challenges the conventional notion that older funds inherently boast a positive rating, adding a layer of complexity to our understanding of the interplay between fund age and performance.

Contrary to initial expectations, classes 4 and 5 present a cohort of relatively younger investment funds compared to their higher-rated counterparts. This unexpected discovery piqued our interest, prompting a closer inspection. In class 4, only two funds manage to reach 63 years of activity, with an average hovering around 15 years. Similarly, in class 5, albeit a slight uptick, only one fund attains 85 years of activity, resulting in an average settling at 17 years. These figures stand in stark contrast to the stalwart longevity observed in class 1.

In essence, this surprising revelation implies that older funds, owing to their maturity and perhaps a heightened market awareness concerning sustainability and ethics, exhibit a distinctive focus on gender diversity. This nuanced perspective challenges the conventional narrative that associates age with a singular trajectory of success. Instead, it suggests that the extended market presence of these older funds has fostered a unique sensitivity to issues such as gender diversity, providing a fresh lens through which we can interpret their sustained success and ethical considerations.

5. Conclusions

In conclusion, based on the literature analyzed and the empirical analysis conducted, it was possible for us to answer the research questions:

- *RQ1: How GD, as an expression of CSR, is valued within investment funds?*

Building on the insights gained from our empirical study, it aligns seamlessly with the wealth of literature that underscores the interconnectedness of GD and CSR practices. The symbiotic relationship between GD and CSR has transcended theoretical frameworks and found tangible application in the realm of fund-related investments. Notably, an increasing number of these entities incorporate this link into their comprehensive assessments of a company's sustainability and ethical practices.

Our findings reinforce the established notion that gender diversity is not only a significant factor in fostering good corporate governance but also a positive indicator of robust CSR initiatives. The correlation between gender diversity, CSR, and long-term corporate success underscores the pivotal role these factors play in ensuring stability and resilience in the business landscape. This echoes the sentiment prevalent in our empirical analysis, where certain rating classes serve as quantifiable indicators of an investment fund's commitment to CSR and ESG principles.

Investment funds prioritizing CSR practices, coupled with steadfast adherence to ESG commitments, are increasingly garnering favor among investors. This heightened investor attention to the impact of their investments reflects a growing awareness of the broader implications of their financial decisions. In concordance with these trends, our empirical study corroborates the positive reception of such funds in the market. The top-

rated classes, as delineated in *Figures 1 and 2*, not only amass the largest average funds in terms of size but also represent the pinnacle of wealth within the investment landscape. This convergence further reinforces the pivotal role played by CSR, ESG commitments, and gender diversity in shaping investor preferences and contributing to the sustained success of investment funds.

- *RQ2: What is the relationship between Fund Net Asset and the GD rating?*

Navigating the intricate relationship between an investment fund's assets under management and its GD rating reveals a complex interplay influenced by diverse factors. Consistent with existing literature, the consensus holds that when a fund prioritizes GD within its investment strategy, it tends to attract a cohort of investors who value socially responsible and sustainable investments. The logical outcome of this investor preference is an influx of capital, directly contributing to the augmentation of the fund's size.

However, the empirical analysis we conducted introduces a nuanced perspective, offering a more complex narrative. While our findings affirm that funds with higher net assets tend to achieve elevated rating classes, signaling a correlation between AUM and GD rating, the pinnacle of excellence remains elusive. Intriguingly, as depicted in *Figure 1*, the largest funds find their residence in "rating class 2", achieving high but not the highest rating classes.

This deviation from the expected pattern is further emphasized by the revelation that "rating class 2" not only hosts the largest funds but also accumulates the highest amount of capital among the funds, as illustrated in *Figure 2*. This discrepancy prompts a deeper exploration into the dynamics at play within this rating class, questioning whether there are specific attributes or strategies that differentiate it from the others.

In essence, our empirical analysis introduces a layer of complexity to the established theory, suggesting that while higher net assets contribute to elevated rating classes, the pursuit of excellence may be subject to additional factors within the nuanced landscape of investment fund dynamics. This opens insights for further research and exploration to uncover the intricacies that govern the relationship between AUM, GD rating, and the elusive pursuit of excellence within the investment aim.

- *RQ3: What is the relationship between fund longevity and GD rating?*

Our empirical evidence sheds light on a distinctive aspect as we delve into the relationship between GD rating categories and the longevity of investment funds within our selected sample. Contrary to prevalent notions in the literature, our findings reveal a lack of discernible evidence connecting GD rating categories with the temporal dimension of fund activity. The funds under scrutiny exhibit an almost perfect distribution in the graph presented in *Figure 3*, challenging the conventional wisdom that suggests a correlation between consolidated, long-standing funds and advantages in terms of credibility and investor trust.

This deviation from the expected pattern prompts a reevaluation of assumptions about the benefits derived from the longevity of funds. In our sample, the absence of a clear trend in fund distribution across the GD rating categories defies the notion that well-established funds automatically garner more favor from investors who prioritize GD in their investment decisions. The intricacies of building credibility and trust appear to be more nuanced than a simple linear relationship with the age of the funds.

Furthermore, our empirical study dispels the hypothesis that younger funds are inherently more attentive to sustainable and ethical practices. Contrary to expectations, the observed sample doesn't align with the anticipated trend, challenging the assumption that younger funds are predisposed to be more attuned to contemporary sustainability and ethical considerations.

In essence, our empirical evidence introduces a layer of complexity to the prevailing narratives in the literature, emphasizing the need for a more nuanced understanding of the multifaceted dynamics at play in the intersection of GD ratings, fund longevity, and ethical considerations. This calls for a reexamination of conventional wisdom and opens avenues for further exploration to unravel the intricate relationships within the diverse landscape of investment funds.

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