




Dariusz Filip

 <https://orcid.org/0000-0002-6905-1004>

Department of Finance

Faculty of History and Social Sciences

Cardinal Stefan Wyszyński University in Warsaw (UKSW), Poland

d.filip@uksw.edu.pl

The profile of a Polish mutual fund manager

doi: 10.22367/jem.2018.32.03

Accepted by Editor Ewa Ziemba | Received: December 4, 2017 | Revised: January 3, 2018; February 24, 2018 | Accepted: March 4, 2018.

Abstract

Aim/purpose – The purpose of this paper is to identify the characteristics that are typical of mutual fund managers.

Design/methodology/approach – The study concentrates on a set of socio-demographic data, such as: age, gender, education, experience, and professional qualifications of 336 portfolio managers. The applied research strategy relies on an analysis concerning a set of statistical metrics describing the population under examination.

Findings – The average Polish fund manager is a 37-year-old man, a holder of a stock-broker or investment adviser license. He obtained the authorization from the Polish Financial Supervision Authority (KNF) a few years after graduating from the Warsaw School of Economics (SGH). He has 11 years' experience in financial markets and 7 years' experience in the mutual fund industry.

Research implications/limitations – The identification of managerial characteristics for the purpose of creating a profile of a Polish mutual fund manager will provide an important basis for further surveys and analyses aimed to evaluate the effectiveness of mutual funds.

Originality/value/contribution – There are no investigations within the discussed area in Polish studies. Therefore, the identification of the characteristics that are typical of mutual fund managers will make a contribution to the finance literature.

Keywords: mutual funds, portfolio managers, managerial characteristics, human capital.

JEL Classification: G23, J24, M12.

1. Introduction

In general, collective investment institutions' performance depends on the situation on the financial markets on which their securities are traded. Some researchers argue that the human factor could significantly influence the final effects of asset management. According to the resource-based view, resources of organizations contribute to a competitive advantage (Filip, 2017). In collective investment institutions, this kind of advantage may be human resources. Their characteristics can translate into valuable and diverse managerial skills which enable them to outperform others.

The managerial characteristics which could be related to managers' skills arise from the acquired education, management tenure or overall experience in the financial sector (cf. Chevalier & Ellison, 1999a). The studies conducted on developed markets concentrate also on socio-demographic data determining the manager profile. However, due to the lack of relevant databases containing information about fund managers, the Polish relevant literature lacks studies of managerial determinants of performance or statistical investigations concerning the characteristics describing managers themselves.

The development of the capital market in Poland has resulted in an increased interest in collective investment institutions among individual investors. The mutual fund industry is dynamically developing and is able to overcome economic downturns. According to the Chamber of Fund and Asset Management (IZFA, 2017), the total number of registered mutual funds in Poland was 81 in 2000. The value of assets managed by the whole industry was PLN 7.1B in that period. Despite the noticeable 2008 financial crisis, the number of funds and sub-funds increased to 503 in Poland. However, a considerable decrease of assets under management, to PLN 73.7B, in relation to the previous periods needs to be noted. At the end of 2016, the total number of mutual funds managed by 63 fund families was 1,404 and the asset value of the mutual fund industry increased to the record-breaking amount of PLN 259B. The development prospects for the industry are favorable, which means continuous demand for qualified staff to manage capital assets.

The empirical investigations concerning the relation between managerial characteristics and the achieved returns are important to both investors and mutual funds. From the purely cognitive perspective, the issue enriches the existing financial literature by providing information about the Polish portfolio manager's profile and sheds new light on the state of knowledge by addressing the issue of mutual funds from developing countries. Moreover, identifying the organizational characteristics of asset management teams, which are given an op-

portunity for professional development of employees, and defining the clues describing the profile of a successful manager will help students or other persons interested in pursuing their career on the capital market to make appropriate choices about their future.

The purpose of this paper is to identify the characteristics that are typical of portfolio managers of mutual funds. Determining the managerial characteristics that could enable the development of the profile of a Polish mutual fund manager would provide an important basis for further surveys and analyses intended to evaluate the effectiveness of mutual funds.

The structure of this paper enables a distinction of its several parts. Section 2 presents the theoretical background consisting of the main findings derived from the relevant literature. The data set and the applied research approaches are described in Section 3. It is followed by Section 4, which provides the obtained empirical results together with their interpretation. Finally, Section 5 is a summary of the major findings of this study.

2. Theoretical background

A vast majority of the empirical studies concerning collective investment institutions focus on analysing the effectiveness of mutual funds. It is assumed that funds' outperformance may be linked, among others, to valuable managerial skills, the existence of which may be confirmed in particular by the occurrence of performance persistence (Carhart, 1997; Goetzmann & Ibbotson, 1994; Volkman & Wohar, 1995). The researchers attempted to examine whether the asset management skills, if any, measured with the rates of return achieved by managers, could be influenced by the characteristics predisposing managers to run portfolios.

Generally, managerial characteristics, besides demographic data, include features concerning professional training. The mentioned factors have been examined in the countries with developed financial markets since the beginning of the 1990s. Yet, the studies by Porter & Trifts (1998) were constricted to the issue of managers' age and generated returns in relation to their further professional careers. The undertaken analysis of the performance achieved by 93 managers of funds in the period 1986-1995 shows that successful managers do not retire or are not made redundant. However, the study finds no evidence for the assumption that the average manager with 10 years' experience outperforms his or her less experienced peers.

The paper by Chevalier & Ellison (1999b), in turn, focuses on the US labor market for fund managers. The study uses data on 453 managers of growth as well as growth and income mutual funds from the period 1992-1994. The scholars found that younger managers usually lost their jobs because they achieved lower returns. Moreover, they tended to avoid unsystematic risk and followed the herd into popular sectors for fear of poor performance and being made redundant.

However, one of the first studies handling managerial characteristics in a comprehensive manner was one by Chevalier & Ellison (1999a). They analyzed four variables, such as managers' age, quality of education, tenure, and MBA degree. On the basis of the available data on 492 managers who individually managed assets of growth as well as growth and income mutual funds, they investigated their performance over the period 1988-1994. The conducted analysis confirmed that the managers who attended higher-SAT undergraduate institutions obtained higher risk-adjusted returns. Younger managers graduated from these universities more frequently. Moreover, the authors found that the stock-picking ability could be supported directly by the quality of education or indirectly by the established social networks within the circle of financial market actors.

An equally popular study referred to in the relevant literature is one by Golec (1996). The aim of his analysis was to examine whether managerial characteristics were related to performance of mutual funds, the risk they took and the fees they charged. The research sample consisted of 530 equity funds and the covered period was 1988-1990. The applied variables were, among others, a manager's age, tenure, education, MBA degree, and size of the managerial team. The obtained results showed that individual investors could expect better performance from younger managers (aged below 46), who held their MBA degrees and had worked in the mutual fund for a long period (more than 7 years). The most significant predictor of performance was tenure.

Bliss & Potter (2002) used data on gender, in the first place, but also age, tenure, year of graduation, quality of education, and MBA degree in their analysis of asset management effects for domestic and foreign equity funds. The authors found that female managers ran more risk-averse portfolios and were less overconfident than their male counterparts. However, the results were conditioned on the applied risk measure. Bliss & Potter (2002) mentioned that there were few females in the segment of the capital market (approx. 11% of the manager population).

The influence of gender on the functioning of mutual funds was investigated also by Niessen & Ruenzi (2006). In order to conduct their analysis, they used data on actively managed US equity funds from the period 1994-2003. They showed that the share of funds managed by women was approx. 10% of all examined funds. The scholars found no differences in the achieved returns that

could be gender-related. However, the study revealed that funds with female managers obtained significantly lower net inflow from investors, which was detrimental for funds. According to the researchers, the reason for employing woman was that large, widely recognised entities were afraid of being accused of discrimination. Additionally, they also noticed that female managers were employed in less conservative states of the USA. The authors referred to the study by Lewellen, Lease, & Schlarbaum (1977), who noticed that gender was one of the most significant determinants of the investment style.

Other interesting findings come from a study by Philpot & Peterson (2006), who used data concerning tenure, professional certifications, experience on the market, and management structure (individual or team). They analyzed the influence of managerial characteristics on performance of 63 real estate mutual funds in the period 2001-2003. Their investigation showed that managers with longer tenure were more likely to accept a higher level of market risk, however, more experienced ones do not tend to provide higher abnormal returns than their counterparts who held their managerial positions for a shorter period of time.

Another factor related to managerial characteristics, apart from tenure, by which Lee, Yen, & Chen (2008) extended the area of their examination, was seniority. On the basis of a sample of 122 Taiwan open-end stock funds operating in the period 2001-2006, they showed that a manager with at least 24.3 months of tenure in the fund achieved better performance than a beginner fund manager. Moreover, prolonged experience on financial markets was defined as a potential cause of performance erosion. It could be explained by the fact that long-term seniority is associated with older age and hence it is negatively related to performance. Therefore, fund managers with a longer tenure but relatively short market practice might achieve better performance than less experienced but older competitors. The average period of mutual fund manager tenure is 23.4 months, while fund management industry's experience – 49.5 months.

Among studies from finance literature, it is worth mentioning the issue of quality of fund managers' education. In the paper of Poole, Bianco, & Giroux (2006), the factor was identified with a university's membership in the Ivy League – the most prestigious top 8 universities in the USA rather than with the average SAT score of higher education institutions. The authors found that there were no significant performance differences in the sample of 76 managers divided into subsamples of those with graduate degrees and those without graduate degrees. However, the managers holding their MBA degrees awarded on completion of the top 20 MBA programmes outperformed the managers from business schools beyond the top 50 Wall Street Journal list. Poole et al. (2006) noticed also that management tenure was positively related to performance.

One more factor, namely professional certifications, broadens the set of characteristics presented above. Shukla & Singh (1994) tried to determine whether managers possessing the competence of financial analysts, confirmed by the CFA charter, were able to outperform others. Their study covered 223 mutual funds divided into two groups: one having at least one manager CFA designation (110 entities) and the other where none of the managers was CFA-designated (113 entities). Based on the data from the period 1988-1992, they discovered that funds with CFA charterholders were more risky yet more diversified than ones with no charterholders. Furthermore, mutual funds with CFA-chartered managers present higher returns, yet the difference was insignificant.

As was mentioned in the introduction, the issue of managerial characteristics is extensively discussed in the studies from developed markets. This research area is analyzed extremely rarely in developing countries. The Polish literature lacks this kind of studies with the exception of the paper by Perez (2012), who evaluated the effectiveness of Polish mutual fund performance and mentioned potential managerial characteristics which could influence performance, and Filip (2015), who arranged and defined them. As regards changes on the position of portfolio manager in Polish funds, there is only one study discussing the subject matter presented by Asyngier & Miziolek (2017). Therefore, the analysis of relations between managerial characteristics and the effects of asset management in Poland remains an open research field, which could fulfil the knowledge gap existing in this area by specifying the characteristics that are typical of mutual fund managers.

3. Research method and data description

Determining the profile of a Polish mutual fund manager required gathering several sorts of data. In general, the source of the basic information about 336 current portfolio managers was the dataset obtained from the Analizy.pl web service. The available database includes the managers' names and their affiliations with mutual funds. For 112 of them, also details of their biographies were described in brief. For others, the author made an attempt to create short biographical sketches. In order to find a given manager's age, the *LEX Informator Prawno-Gospodarczy* service by Wolters Kluwer Poland proved useful for determining the year of birth for a majority of the managers. As regards the universities from which the managers graduated and their experience in the industry, in the case of some of the managers for whom biographical sketches were unavailable, the information was found in various sources, e.g., the social media (*GoldenLine* or

LinkedIn) and mutual funds' websites. The fact of holding a license of stockbroker or investment adviser with the KNF's authorization (with the date of its attainment) was verified by means of the list of license holders published by the Polish Financial Supervision Authority (KNF). An additional indicator describing the managers was the fact of having the Chartered Financial Analyst (CFA) certification or the Certified International Investment Analyst (CIIA) diploma. The data on professional qualifications were derived from websites of CFA Institute or Association of CIIA, respectively. The last element describing the profile of a fund manager was the doctoral degree. The names of the managers who defended their doctoral dissertations came from the data published in the POLON/OPI (*ludzie nauki*) base.

Given the above, the created database consisted of mutual fund managers' age, period of holding their stockbroker licenses, period of experience in the mutual fund industry, and period of experience in the financial markets. It was also possible to obtain the information about the nationality and gender of the analysed occupational group. Moreover, the data set included a list of the universities from which the managers graduated. The database was completed at the end of 2016 and it is one of the measurable effects of the research project implemented in the period 2015-2017. The approach to the way in which the data were gathered from online sources, defined in a broad sense, was similar to the one applied in the paper by Filip, Jackowicz, & Kozłowski (2017). Outliers were removed from the raw data.

This study was intended to be preliminary. The obtained findings will aid the identification of the characteristics that are typical of mutual fund managers. Determining their attributes which will enable the development of the profile of a Polish mutual fund manager will be possible by means of a statistical structure analysis. It is a description of the examined group in terms of the features measured on the basis of a set of statistical metrics. The main goal of the applied tools is to present the analyzed population accurately from the statistical point of view. The analysis of the structure is a descriptive tool and its metrics are supposed to describe the data rather than verify a hypothesis.

In order to determine whether the gathered data will be appropriate to conduct further analyses in relation to e.g. the effects of asset management, in turn, it will be reasonable to examine the normal distribution. The tools employed are the W/S test for normality, the Jarque–Bera test for normality, and the D'Agostino test. The first of the mentioned ones is a simple test where the data range is expressed in standard deviation units (Nosakhare & Bright, 2017):

$$q = \frac{w}{s}, \quad (1)$$

where:

q is the normality test statistic,

w is the range of the data set,

s is the standard deviation of the data.

The W/S test uses a critical range. Thus, the q statistic can be compared to the lower boundaries and upper boundaries at the alpha level of 0.05.

The test for normality of residuals will be conducted according to the following formula (Bera & Jarque, 1980):

$$JB = n \left[\frac{skew}{6} + \frac{(kurt - 3)^2}{24} \right], \quad (2)$$

where:

JB is a value of Jarque–Bera statistics,

n is the number of observations,

$skew$ stands for skewness,

$kurt$ is kurtosis.

The JB statistic can be compared to the χ^2 distribution with 2 degrees of freedom to determine the critical value at the alpha level of 0.05.

The last of the applied tests is treated as an omnibus test for departures from normality (cf. D'Agostino, 1971):

$$D = \frac{T}{\sqrt{n^3 SS}}, \quad (3)$$

where:

D is the test statistic,

T is calculated as $\sum \left(i - \frac{n+1}{2} \right) x_i$,

i means a rank of observation x ,

SS is the sum of squares of the data.

The D statistic can be compared to the lower and upper critical value at an alpha level of 0.05.

Moreover, the present study adopts a non-parametric tool to verify the hypothesis about the independence between the selected variables. The mentioned statistic extends the discussion that makes use of a crosstab report. The examination will be carried out by means of the *Chi-square* test:

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(Q_{i,j} - E_{i,j})^2}{E_{i,j}}, \quad (4)$$

where:

Q_{ij} is the observed frequency of two nominal variables,

E_{ij} means the expected frequency of the i -th row (r) and j -th column (c).

4. Research findings

It is possible to determine characteristics of fund managers through a set of statistical metrics describing the population under study. Table 1 presents summary statistics related to portfolio managers' characteristics, such as: nationality, gender, and holding a license of stockbroker or investment adviser with the KNF's authorization.

Table 1. Summary statistics for the binary variables used

Nationality			Gender			License		
	quantity	%		quantity	%		quantity	%
Poles	318	94.64%	men	323	96.13%	yes	203	60.42%
Foreigners	18	5.36%	women	13	3.87%	no	133	39.58%

Source: Own calculation.

On the basis of presented data, it was possible to infer that Polish mutual funds, in all likelihood, are managed by male Polish nationals. Women are rare in the community of fund managers (approx. 4%). Furthermore, holding a license of stockbroker or investment adviser with the KNF's authorization was declared by approx. 60% interviewees. Moreover, 18 out of the total of 336 managers were foreigners. A more detailed collation of nationality in the analyzed occupational group is presented in Table 2.

Table 2. One-variable data table of managers' nationality

Nationality	No. of managers	%
Polish	318	94.6%
American	9	2.7%
Australian	2	0.6%
Italian	2	0.6%
Other	5	1.5%
Total	336	100%

Source: Own calculation.

It should be noted that the most numerous group among the mentioned foreigners were Americans (9 persons). The Australian or Italian nationality was declared by 2 managers (Table 2). The foreigners were also British, Dutch, Austrian, Hungarian, Korean nationals. Equally detailed observations related to the population structure were made for education. Table 3 contains the information about the schools attained by the managers.

Table 3. One-variable data table of the Polish higher education institutions from which the managers graduated

University	No. of managers	%
Warsaw School of Economics (SGH)	110	41.8%
University of Warsaw (UW)	35	13.3%
Poznań University of Economics and Business (UE Poznań)	21	8.0%
Cracow University of Economics (UE Kraków)	14	5.3%
University of Lodz (UŁ)	11	4.2%
Warsaw University of Technology (PW)	8	3.0%
Wroclaw University of Economics (UE Wroclaw)	6	2.3%
University of Economics in Katowice (UE Katowice)	5	1.9%
Maria Curie Skłodowska University in Lublin (UMCS)	5	1.9%
Other	48	18.3%
Total	263	100%

Source: Own calculation.

A typical fund manager, besides demonstrating appropriate skills, should have higher education. Unfortunately, not all interviewees shared the information about their education. From among the 336 managers surveyed, only 263 (78% of Polish managers) disclosed their educational background. Moreover, 38 of them (14%) declared that they graduated from more than one university. The school from which the highest number of the managers graduated was the Warsaw School of Economics (around 42%). It was followed by another Warsaw higher education institution – the University of Warsaw (UW) (13%). Arguably, many of the managers included in the research sample were graduates in Economics, yet the database lacks the information about the fields studied by the subjects. Further positions in the ranking list of most popular schools among the managers were occupied by two economics schools: the Poznan University of Economics and Business (8%) and the Cracow University of Economics (5%). The successive noteworthy positions (more than 5 persons) were taken by two universities (the University of Lodz – 4%, and the Maria Curie Skłodowska University in Lublin – 2%), two economics schools (the Wroclaw University of Economics – 2%, and the University of Economics in Katowice – 2%), as well as one technological school – the Warsaw University of Technology (PW) (3%).

To recapitulate, the city where nearly 60% of the surveyed managers completed their studies was Warsaw (SGH, UW or PW). In general, an average Polish manager graduated from the Warsaw School of Economics.

Taking other sources of the collected data concerning education into account, it is worth mentioning that 44 (13%) out of 336 managers declared having completed postgraduate studies or MBA programmes, and 25 (7%) managers received their doctorate degrees. After verifying the managers' names from the list of holders of elite certificates, such as Chartered Financial Analyst (CFA) and Certified International Investment Analyst (CIIA), which confirm professional qualifications, it turned out that CFA was held by 83 managers (25%), while CIIA – 8 (i.e., 2.4%).

As was mentioned before, the purpose of this paper is, among others, to provide a descriptive summary of the collected data. Hence, the most suitable methods will be the basic measures of descriptive statistics. On their basis, it will be possible to make certain fundamental conclusions and generalizations about the available set of data. Table 4 shows the descriptive statistics related to numerical variables, such as a manager's age, period of holding a brokerage license, period of experience in the mutual fund industry, and period of experience in financial markets. The data related to these periods are presented in years.

Table 4. Summary statistics for the numerical variables used

Specification	Age	Brokerage	Experience	Seniority
No. of observations	208	198	248	244
Mean	36.69	10.36	7.72	11.65
Median	35	9	6	11
Huber's M-estimator	35.90	9.99	6.83	11.25
Mode	30	7	6	9
Minimum	25	1	1	2
Maximum	56	23	23	25
Range	31	22	22	23
Lower quartile	31	6	3	7
Upper quartile	42	15	11	16
Interquartile Range	11	9	8	9
Sample Variance	46.62	35.95	28.62	30.91
Standard Deviation	6.83	6.00	5.35	5.56
Coefficient of Variation	18.6%	57.9%	69.3%	47.7%
Kurtosis	-0.32	-0.89	-0.27	-0.94
Skewness	0.66	0.45	0.77	0.28
W/S test for normality	4.54	3.67	4.11	4.14
Jarque-Bera normality test	118.41	139.33	142.27	169.17
D'Agostino test	0.2804	0.2837	0.2777	0.2869

Source: Own calculation.

As was shown in Table 4, the mean age in the examined occupational group was nearly 37 years. This value remains close to the median (35 years), however, the mode is relatively lower (30 years). The youngest manager was 25 years old, while the oldest – 56. The coefficient of variation indicated a low dispersion (19%) of the managers' age. As regards the measurement of the concentration and asymmetry of the distribution of the data concerning the age variable, the coefficients provided findings implying a subtly flatted distribution, which means that there were still few extreme outliers and an insignificantly right-skewed distribution in the data set.

Another characteristic describing the sample was the period of holding a stockbroker or investment adviser license. In this case, the number of observations was the smallest (198) from all variables included in Table 4. Moreover, it could be noted that 113 managers had a stockbroker license and 166 – an investment adviser license. 81 managers had both licenses with the KNF's authorization. The presented summary used the date of obtaining the first of the licenses. On the basis of the gathered data, it was found that the mean period of holding a brokerage license was just above 10 years. The middle value for the sample was 9, while the mode – 7 years. The obtained value of the relative standard deviation (CV) indicates moderate dispersion. Furthermore, the analysis of asymmetry and concentration around the central value provides grounds for the ascertainment that the variables can be described by a platykurtic distribution with a long right tail.

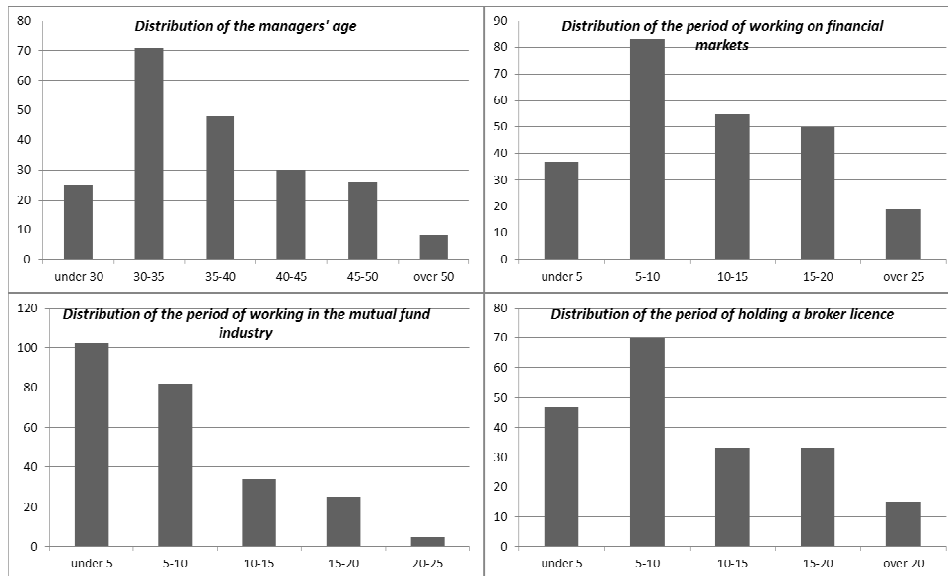
The next area of the analysis of the characteristics describing the population of fund managers is related to experience in the mutual fund industry. The mean period of working on the market was more than 7 years, which was slightly different from the median (6 years). Usually, the values of the characteristic varied from their mean level by 5 years. This observation could be connected with the coefficient of variation, which indicated a moderate scatter of almost 69% of the arithmetic mean. The skewness ratio shows that the data set is right-skewed, which means that the mean is greater than most of the scores.

The last variable in the statistical description of the characteristics was the period of experience in the financial industry, the so-called Seniority. A general working lifetime in the financial segment could also describe managers of mutual funds. The mean period of working on financial markets for the occupational group was approx. 11 years and the median was similar, while the maximal difference between the managers' seniority was 23 years. The CV value indicated a moderate dispersion of the analyzed characteristic. The measurement of the relative peakedness of the distribution pointed to a flatter rather than normal distribution, which means a weak concentration of the items around a central value.

Descriptive statistics enables the examination whether the collected data will be appropriate for conducting further analyses in comparison with e.g., the effects of asset management. One of the intentions of the study was to verify the assumption of the distribution normality. For three characteristics (i.e., Age, Experience, and Seniority), all applied statistics gave grounds for positive verification of the hypothesis on normal distribution. For all applied statistics, the p -value is lower than 0.05 and therefore the null hypothesis about normally distributed data should be rejected. It means that the data should be transformed into approximately normal data. Nonetheless, the mentioned characteristics could be used for subsequent analyses concerning the relation between the variables.

The continuation of the discussion related to normal distribution for the analyzed characteristics could be graphically plotted with equal bin width. Figure 1 presents four histograms of the distribution of the managers' features.

Figure 1. The histograms of the distribution of the managers' characteristics



Source: Own combination.

The specificity of the histogram allows the measurement of the most and the least numerous class intervals. Figure 1 graphically presents the observations for the managers' age, the period of holding a broker license, the period of working in the mutual fund industry, and the period of working on the financial market in bar widths. The choice of bin sizes in years was specified in general terms to show the quantity of the defined class intervals. The transformation of the primary data into bins and the selection of their sizes resulted in a partial distor-

tion of the findings coming from descriptive statistics, i.e., for Brokerage and Seniority. However, it is possible to find a certain confirmation of the previous conclusions, especially for Age and Experience. The above histograms do not show normal distributions, they are for reference only. Taking the above into consideration, it is worth determining the interrelationship between the variables. Table 5 contains the values of the Pearson correlation coefficients for pairwise factors.

Table 5. Pairwise correlation coefficients of the managers' characteristics

Specification	Age	Brokerage	Experience	Seniority
Age	1			
Brokerage	0.755	1		
Experience	0.628	0.627	1	
Seniority	0.814	0.767	0.778	1

Source: Own calculation.

Table 5 presents the correlation coefficients for the basic variables described in detail in the previous part. All coefficients of the Pearson correlation were statistically significant. The values of the correlation measure between most variables proved to be very high (above 0.7). A moderate correlation is observed only between Age and Experience as well as Brokerage and Experience. In general, a relatively high level of correlation suggests choosing only one variable for further analysis.

The collation of the distribution of the observation for Experience and Education seems interesting from the perspective of discovering certain tendencies on the labor market in the sector. In Table 6, both variables are divided into 3 categories. For the Experience variable, the managers were split into the following groups: fewer than 5 years (low experience), above 5 years but not more than 9 years (medium experience), and above 9 years (high experience) – which resulted from a similar size of the groups. The Education factor, in turn, was related to the type (profile) of the school from which the managers graduated: economics schools, universities, technology schools.

Table 6. The match of manager experience and manager education (3x3)

Specification	Economics School	University	Technology School	Total
High Experience	35	22	14	71
Medium Experience	48	34	4	86
Low Experience	57	15	12	84
Total	140	71	30	241
	chi ² 16.70	df = 4	p-value	0.002

The experience-education matrix presented above permitted the analysis of the size corresponding to the categories designated by more than one variable. The analysis enables identification of the relations between the profile of the school from which the managers graduated and market worklife. As was presented in Table 6, the biggest group consisted of relatively low experienced managers, with fewer than 5 years on the market, who graduated from economics schools. It means that the employees entering the labor market in the recent years have definitely been the managers who have graduated from universities of economics. The disparities between graduates from different types of schools were less visible in the group of most experienced managers (above 9 years). However, higher education institutions with profiles in economics and finance have still been predominant. Furthermore, the *Chi*-squared statistics provide grounds for rejecting the null hypothesis about the independence between the two mentioned variables. However, the test's value is presented for reference only and should be treated with caution due to the unequal total frequency of the observation in the manager education column.

The presented results allow the determination of the profile of a Polish mutual fund manager displaying specific characteristics regarding gender, nationality, age, experience, professional qualifications, and education. The analysis of various data sets, which consisted in applying descriptive statistics tools and statistical measures of the structure, provided results referring to the distributions of the gathered variables. The above findings will enable further surveys and analyses based on the collected database.

5. Conclusions

Human resources may exert impact on competitive advantage on the market. Managerial skills resulting from managers' characteristics could influence the performance of collective investment institutions. Hence, there are some implications for researchers and practitioners that could be extremely important. From the proper perspective, mutual funds may take advantage of the favorable managerial attributes when reaching the client, whereas individual investors could treat the characteristics desired in fund managers as a premise for investment decisions. From the purely cognitive perspective, the issue enriches the existing financial literature by providing information about the Polish portfolio manager's profile and sheds new light on the state of knowledge by addressing the issue of mutual funds from developing countries.

The purpose of this paper was to specify the characteristics that could describe managers of mutual funds. The study concentrated on a set of socio-demographic data, such as: age, gender, education, experience, and professional qualifications of 336 portfolio managers. The applied research strategy relied on an analysis concerning a set of statistical metrics describing the population under examination.

As a result of the conducted analysis, it was possible to describe the profile of a Polish mutual fund manager. It was noted that the average Polish fund manager is a 37-year-old man being a holder of a stockbroker or investment adviser license. He obtained the mentioned KNF's authorization a few years after graduation. He was awarded his academic degree from the Warsaw School of Economics (SGH). He has 11 years' experience in financial markets and 7 years' experience in the mutual fund industry.

The identification of managerial characteristics for the purpose of creating a profile of a Polish mutual fund manager will provide an important basis for further surveys and analyses aimed to evaluate the effectiveness of mutual funds. The paper might be perceived as an original one since there are no similar studies in the Polish finance literature as well as other countries from the CEE Region. Therefore, the identification of the characteristics that are typical of mutual fund managers will make a research contribution. Moreover, the examination of relations between managerial characteristics and the effects of asset management in Poland remains an open research field, which could fulfil the knowledge gap existing in this area.

Acknowledgements

The author acknowledges the financial support of the National Science Center (NCN), Poland, project no. 2014/15/D/HS4/01227 entitled "Determinants of Mutual Fund Performance: Managerial characteristics and fund attributes".

The author would like to thank Łukasz Popielewicz and Kamil Rybak from the "Ceteris Paribus" Economics Student Research Circle at the Cardinal Stefan Wyszyński University in Warsaw (UKSW) for their help in collecting and analysing certain types of data.

References

- Bera, A. K., & Jarque, C. (1980). Efficient test for normality, heteroscedasticity and serial independence of regression residuals. *Economic Letters*, 6(3), 255-259. doi: 10.1016/0165-1765(80)90024-5
- Asyngier, R., & Miziołek, T. (2017). Impact of fund managers changes on Polish equity funds performance. *Folia Oeconomica Stetinensia*, 17(1), 97-108. doi: 10.1515/fofi-2017-0008

- Bliss, R. T., & Potter, M. E. (2002). Mutual fund managers. Does gender matter? *The Journal of Business and Economic Studies*, 8(1), 1-15.
- Carhart, M. (1997). On persistence in mutual fund performance. *Journal of Finance*, 52(1), 57-82. doi: 10.1111/j.1540-6261.1997.tb03808.x
- Chevalier, J. A., & Ellison, G. (1999a). Are some mutual fund managers better than others? Cross-sectional patterns in behavior and performance. *Journal of Finance*, 54(3), 875-899. doi: 10.1111/0022-1082.00130
- Chevalier, J. A., & Ellison, G. (1999b). Career concerns of mutual fund managers. *The Quarterly Journal of Economics*, 114(2), 389-432. doi: 10.1162/003355399556034
- D'Agostino, R. B. (1971). An omnibus test of normality for moderate and large size samples. *Biometrika*, 58(2), 341-348. doi: 10.1093/biomet/58.2.341
- Filip, D. (2015). A review of research on the managerial factors influencing mutual fund performance. In A. Malina, R. Oczkowska, & J. Kaczmarek (Eds.), *Knowledge – economy – society. In the development and challenges of modern economics, finance and information technology* (pp. 175-182). Cracow: Foundation of the Cracow University of Economics.
- Filip, D. (2017). Umiejętności menedżerskie jako zasób instytucji zbiorowego inwestowania [Managerial skills as a resource of collective investment institutions]. In M. Pawlak (Ed.), *Nowe tendencje w zarządzaniu* (Tom VII) [New tendencies in management (Vol. VII)] (pp. 231-240). Lublin: Wydawnictwo KUL.
- Filip, D., Jackowicz, K., & Kozłowski, Ł. (2017). Influence of internet and social media presence on small, local banks' market power. *Baltic Journal of Economics*, 17(2), 190-214. doi: 10.1080/1406099X.2017.1376856
- Goetzmann, W. N., & Ibbotson, R. G. (1994). Do winners repeat? *The Journal of Portfolio Management*, 20(2), 9-18. doi: 10.3905/jpm.1994.9
- Golec, J. H. (1996). The effects of mutual fund managers' characteristics on their portfolio performance, risk and fees. *Financial Services Review*, 5(2), 133-147. doi: 10.1016/S1057-0810(96)90006-2
- IZFA. (2017). *Annual reports on the FI market*. Retrieved from www.izfa.pl
- Lee, J.-S., Yen, P. H., & Chen, Y.-J. (2008). Longer tenure, greater seniority, or both. Evidence from open-end equity mutual fund managers in Taiwan. *Asian Academy of Management Journal of Accounting and Finance*, 4(2), 1-20.
- Lewellen, A., Lease, R., & Schlarbaum, G. (1977). Patterns of investment strategy and behavior among individual investors. *The Journal of Business*, 50(3), 296-333. doi: 10.1086/295947
- Niessen, A., & Ruenzi, S. (2006). *Sex matters. Gender and mutual funds*. CFR-Working Paper No. 06-01. Cologne: Centre for Financial Research (CFR).
- Nosakhare, U.H., & Bright, A.F. (2017). Statistical analysis of strength of W/S test of normality against non-normal distribution using Monte Carlo simulation. *American Journal of Theoretical and Applied Statistics*, 6(5-1), 62-65.

-
- Perez, K. (2012). *Efektywność funduszy inwestycyjnych. Podejście techniczne i fundamentalne* [The effectiveness of mutual funds. A technical and fundamental approach]. Warszawa: Difin.
- Philpot, J., & Peterson, C. A. (2006). Manager characteristics and real estate mutual fund returns, risk and fees. *Managerial Finance*, 32(12), 988-996. doi: 10.1108/03074350610710481
- Poole, B. S., Bianco, C. A., & Giroux C. (2006). Mutual fund management and fund performance. *Journal of Business & Economics Research*, 4(1), 1-4. doi: 10.19030/jber.v4i1.2621
- Porter, G., & Trifts, J. (1998). Performance persistence of experienced mutual fund managers. *Financial Services Review*, 7(1), 57-68. doi: 10.1016/S10570810(99)80013-4
- Shukla, R., & Singh, S. (1994). Are CFA charterholders better equity fund managers? *Financial Analysts Journal*, 50(6), 68-74. doi: 10.2469/faj.v50.n6.68
- Volkman, D. A., & Wohar, M. E. (1995). Determinants of persistence in relative performance of mutual funds. *Journal of Financial Research*, 18(4), 415-430.