# THE AGE AND THE PERFORMANCE OF POLISH ROAD TRANSPORTATION COMPANIES

**Andrzej Krzyszkowski**
Uniwersytet Technologiczno-Humanistyczny, Radom, Poland
E-mail: a.krzyszkowski@uthrad.pl

**Piotr Korneta**
Warsaw University of Technology, Poland
E-mail: piotr.korneta@pw.edu.pl

*Abstract*

In this paper we study the relationships between the age of the road transportation companies registered in Poland in a period between 2013 and 2017 and their performance. The sample for this study is obtained from Emerging Markets Information Service and comprise 8,723 observations relating to 2,367 road transportation companies. We chose the growth of sales and the profitability ratios, namely return on equity (ROE) and return on assets (ROA) as proxies for the performance of studied companies. We employ in our research Kendall tau-b and Spearman rho coefficients. The obtained empirical results indicate a negative and statistically significant relationships between the age of studied companies and their growth of sales and the profitability. For business practitioners it means that younger road transportation companies outperform their older peers, in terms of both: the growth of sales and the profitability. Very low p-values confirm our results are robust. The paper ends with managerial implication and advantages following from the applied analysis, limitations of the study and indications for further research.

**Key words:** age, performance, growth, profitability, road transportation

## 1. INTRODUCTION

Yet, there is no consensus among researchers on the influence of age on the performance of the companies. Some scholars claim innovations are the attribute of young companies and start-ups and due to that young companies should outperform their older peers (Colombo & Grilli, 2005; Navaretti et al., 2014). At the same time, the other scholars postulate the older companies have better access to resources, better reputation and more experience, hence should outperform younger companies (Megaravalli & Sampagnaro, 2018; Curran et al.,1993; Yazdanfar, 2013). These, inconsistent results on the influence of age on the performance of the companies

presented by various scholars indicate further research is required. We consider, at this stage, the scope of the studies should be narrowed to specific countries and markets, so next, once considerable number of papers are published, general conclusions can be obtain. Given above, the objective of this paper is to study the relationship between the age and the performance of the road transportation companies registered in Poland.

We chose transportation industry to our study, since the transportation plays a considerable role in any economy and because, we consider this industry yet has not been sufficiently studied. We chose Poland to our study, which is because road transportation companies registered in Poland carry around 25% of all road carriages within European Union territory, hence, are significant from EU perspective (PWC, 2016).

The research methodology of this study uses Kendall tau-b and Spearman rho coefficients to determine the significance of the correlations between studied relationships. The sample used in this paper comprise 8,723 observations relating to 2,367 road transportation companies registered in Poland, with many of them being subsidies of large multinationals, including, for instance DHL or Raben. The data for this study comes from Emerging Markets Information Service (EMIS). In this study we employ growth of sales and profitability as proxies for the performance. This is mostly because, the majority of the company's objectives include either growth or profitability, or both of them. Additionally such approach toward measurement of the company's performance, enables us to measure both, the long term and the short term objectives of the companies, making the results of the study universal.

The reminder of this paper is organized as follows: in Section 2 we review the literature relating to the relationships between the age of the firms and their performance. In Section 3 the sample for the study and our methodological approach is being provided. In Section 4 we present results obtained from empirical study. In the final, Section 5, we provide a discussion, conclusions, managerial implications, limitations of the study and some indications for further research.

The contribution of this study to the extant literature is by empirically investigating the relationships between the age of the road transportation companies registered in Poland and their growth and profitability.


## 2. LITERATURE REVIEW

Due to the importance attached to growth and profitability by scholars and decision makers, the literature of their determinants, despite being already vast, continues to develop. In general, the determinants of growth and profitability can be divided into external and internal. It is widely assumed, the companies have no control over external determinants of performance, which result from environments and affect the whole industries, rather than individual organizations. Among, the external determinants of the performance, inter alia, are: market share, gross domestic product, customer behaviors and competitors (Dawkins et al. 2007, Raymond et al., 2010; Bowman & Helfat, 2001; McGahan & Porter 1997; McGahan & Porter, 2002).

Internal determinants of the company's performance result either from the company itself, or from the management decisions. Some of these determinants can be controlled by companies, for example: expenditure on promotions or the assets held by the company, whereas some cannot, as they are independent from the management and include, for instance, the shareholding of the company or its legal form. Among, already studied internal determinants of performance, inter alia, are: the spending on research and development (Tyagi & Nauriyal, 2017), the size of the company (Krzyszkowski & Korneta 2019), the indebtedness of the company (Jordan et al., 1998; Hall et al., 2000), the optimization of the costs (Domańska 2016), the efficiency of the company and its processes (Yazdanfar, 2013), the working capital management (Al-Debi'e, 2011, Bagchi et al., 2012;), the profitability of the company (Korneta, 2018, Korneta 2019), internationalization (Mazur & Zaborek, 2013), the shareholding of the company (Abu-Tapanjeh, 2006) and the age.

The results presented by various scholars on the relationship between the firms performance and their age are at least not consistent, or even contradictory. The majority of researchers postulates the firm performance is negatively correlated with its age, with many of them presenting empirical evidence (Colombo & Grilli 2005; Westhead & Storey 1996; Evans 1987). This phenomena is frequently explained that younger companies and especially start-ups create breakthrough inventions, while mature incumbent organizations have less frequently such discoveries (Navaretti et al. 2014; Anton 2018). This concept, despite being intuitively right, has been, however, already question be several researchers, who postulate that older organizations can overcome the lack of breakthrough inventions, through branching into new domains and by recombining the new with the old knowledge (Dushnitsky & Lenox, 2005; Phene et al. 2006).

Not all of the scholars claim the relationship between the firms age and their growth and the profitability are negative (Davidsson & Wiklund, 2001; Dahlstrand & Stevenson, 2010; Das 1995; Megaravalli & Sampagnaro, 2018). According to Cooley and Quadrini (2004) and Bottazzi et al. (2011), for instance, younger organizations obtain less long-term bank financing and have lower levels of shareholding capital. Hence, they rely primarily on internal cash flows and so they face higher financial constraints, which results in lower growth and profitability rates. Other scholars (Ahuja & Majumdar, 1998, Stinchcombe, 1965; Curran et al.,1993) postulate better performance of younger companies is a result of lower bureaucratization, as compared with the older ones, while others (Stinchcombe, 1965; Curran et al.,1993; Yazdanfar, 2013) state the older companies are more experienced, have better access to resources, have more information, enjoy learning benefits, are not prone to the liabilities of newness, have better reputation, greater access to business networks and financial institutions and, therefore, should outperform their younger peers.

Lack of consensus among scholars, in the literature, on the nature of relations between the age and the performance of the companies, confirmed our assumption that the study is fully justified, while our results, should add to the body of literature, by providing the empirical evidence from the Poland.

## 3. METHODOLOGY

Our sample, used in this paper, comprises 8,723 observations relating to 2,367 road transportation companies registered in Poland in a 5-years period commencing in 2013 and ending in 2017. Aforementioned 8,723 observations have been obtained from Emerging Markets Information Service (EMIS). Quantities obtained from financial statements many times proven to be beneficial to both scholars and decision makers. These information allow for competitors evaluation, provide information to creditors and suppliers, support forecasting process (Ross, 2008), are used as bankruptcy predictors (Altman, 1968), to evaluate performance of companies (Gjesdal, 2007; Kumar & Ravi, 2007) or to study the impact of contemplated factors on the performance of companies (Xiping, 2014). Because financial statements of studied companies for each of the studied periods have not been provided in EMIS database, the number of observations in our study is reduced and totals 8,723, instead of 11,835 (i.e. 5 years * 2,367 companies). In case of the growth of sales variable, the number of observations decreased further to 5,310, as its calculation requires figures for two consecutive periods. In Table 1 we provide variables used in our study together with the description of their calculations and their acronyms.

**Table 1.** Variables used in the study

| Variable | Acronym | Description | Number of observations |
|---|---|---|---|
| Age | AGE | Year of the study less year of the company's incorporation | 8,723 |
| Growth of sales | GRS | The difference of year sales and prior year sales | 5,310 |
| Profitability 1 | ROE | Ratio of net result to equity | 8,723 |
| Profitability 2 | ROA | Ratio of net result to total of assets | 8,723 |

Source: own elaboration

The independent variable, in this study is the age. Age variable is usually calculated as the number of years a firm has been active in the business since its incorporation (Megaravalli & Sampagnaro, 2018). In this paper age is being calculated in this way. In the literature, several scholars process age variable with natural logarithms (Anton, 2018). We do not consider it relevant for our study, as would have no influence of statistical tests employed.

The first, of our dependent variables is growth. According to Achtenhagen et al. (2010) around 50% of scholars use sales revenues to measure the growth of firms and around 30% the number of employees. Among other measures employed in the literature are: total of assets, market share, earnings, value added, or the number of customers (Furlan et al., 2014). In our study we employed sales revenue, which is a good proxy of commercial success of the company and because, according to Mitchell (1994) sales revenues are significantly correlated with other growth measures.

The second, of studied dependent variables is profitability. Although the profitability can be measured on many ways, the scholars, most frequently employ return on assets (ROA), return on equity (ROE) (Lam & Lee, 2012; Baah-Acquah et

al., 2017; Tyagi & Nauriyal, 2017, Korneta, 2019). In this paper both of stated profitability measures have been used.

Once the variables have been selected to the study, we analyzed their descriptive statistics.

Next, we tested if studied variable present a normal distribution. This has been done, because, normality assumption is a key assumption in the vast majority of statistical test of significance, including frequently used Pearson correlation. Since, upon different situations one normality test can be superior to another, we employed in this study 4 different normality tests, namely: (1) Doornik-Hansen, (2) Shapiro-Wilk, (3) Lilliefors and (4) Jarque-Bera. All of these test have the same null hypothesis, which is the normal distribution of the data [Siddiqi, 2014, pp. 290-291].

In the next step of the study we calculated the Spearman rho and the Kendall tau-b coefficients. These statistics are non-parametric rank correlation measures, employed in many studies to measure the ordinal associations between the studied variables. None of these tests requires normality assumption to be met (Bonett & Wright, 2000; Corder & Foreman, 2014).

## 4. RESULTS

Table 2 contains a descriptive statistic of studied variables. The age of all studied companies is below 39. This is because Polish economy shifted in the beginning of 1990's from socialism into capitalism. Despite, the oldest company is 39, the median value of age variable of 11 indicates studied companies are relatively young, even ignoring the stated conversion of Polish economy. High value of kurtosis (1625.08) and very low median of 0.053 indicates the vast majority of studied firms grew around this value. The ROE median of 0.176 and its mean value of 0.291, together with standard deviation of 8.368 confirm the studied industry is highly profitable. Very high value of kurtosis of 7119.4 states the majority of ROE values are close to its mean value. Descriptive statistics of ROA ratio confirm considerable profitability of the industry.

**Table 2.** Descriptive statistics

| Variable | Mean | SD | Median | Min | Max | Skewness | Kurtosis |
|----------|------|------|--------|-----|------|----------|----------|
| AGE | 9.731 | 4.823 | 11 | 1 | 39 | 0.441 | 1,153 |
| GRS | 1.089 | 23.034 | 0.053 | -1 | 1067 | 38.33 | 1625.08 |
| ROE | 0,291 | 8.368 | 0.176 | -122.00 | 743.0 | 79.458 | 7119.4 |
| ROA | 0.081 | 1.111 | 0.055 | -61 | 37 | -19.61 | 2098.15 |

Source: Author's compilation

In table 3 we present the results of 4 selected normality tests for all 3 studied variables. Based on the figures presented in table 3 it is apparent that the variables have no normal distributions, i.e. none of the variables have p-value greater than 0.05. Hence, the null hypothesis of these tests stating that the data are normally distributed must be rejected.

**Table 3.** Tests of normal distribution

| Test /variable | Doornik-Hansen | Shapiro-Wilk | Lilliefors | Jarque-Bera |
|---|---|---|---|---|
| **AGE** | 212.1 | 0.934 | 0.115 | 466.73 |
| P | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **GRS** | 4.534e+006 | 0.022 | 0.464 | 5.856e+008 |
| p | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **ROE** | 2.969e+007 | 0.026 | 0.426 | 1.843e+010 |
| p | <0.0001 | <0.0001 | <0.0001 | <0.0001 |
| **ROA** | 301892 | 0.056 | 0.394 | 9.741e+008 |
| **p** | <0.0001 | <0.0001 | <0.0001 | <0.0001 |

Source: Author's own compilation

Based on the results of normality test provided in the Table 4 we decided to continue the research with the Speraman's Coefficient of Rank and Kendall tau-b coefficient. Table 4 provides results of our calculations relating to relationships between the age of the companies (AGE variable) and selected to the study independent variables, namely: the growth of sales (GRS), and 2 profitability ratios: ROE and ROA.

**Table 4.** Results of statistical tests of relations between age of the company and studied variables. p-values are one side values.

| | Spearman | | Kendall | |
|---|---|---|---|---|
| | coefficient | p | Tau-B | p |
| GRS | -18.702 | <0.0001 | -0.174 | <0.0001 |
| ROE | -21.297 | <0.0001 | -0.154 | <0.0001 |
| ROA | -2.766 | 0.0028 | -0.021 | 0.0029 |

Source: Author's own compilation

The value of Spearman rho and Kendall tau-B coefficients for studied relationship between AGE and GRS variables are negative and considerable. Very low p values indicate the obtained results are statistically significant. The relationship between the age of the company and its growth, measured with sales is therefore negative. Spearman rho and Kendall tau-B coefficients for profitability variables are also negative, while low p-values confirm the results are statistically significant. Studied relationships between the age and the profitability variables are significantly stronger for ROE than ROA, which is expressed by both the coefficients and p-values.

## 5. DISCUSSION AND CONCLUSIONS

The objective of our study is to analyse the relationships between the age of road transportation companies registered in Poland and their performance. We measure the firm performance with the growth of sales and 2 profitability ratios, namely: return on equity (ROE) and return on assets (ROA). The sample for this study comprise 8,723 observations relating to 2,367 road transportation companies registered in Poland in a

5-years period between 2013 and 2017. We employed in this study the Spearman rho and the Kendall tau-B coefficients, to quantify the strength of studied relationships.

Our findings identified negative relationships between the age of studied companies and their performance. Our results identified that the age of road transportation companies registered in Poland is negatively related with the growth of sales. The Spearman rho and The Kendall tau-b coefficients amounted to -18.702 and -0.174 respectively. For business practitioners this means that young road transportation companies grow faster than the older ones. In this study we identified the negative relationship between the age of road transportation companies registered in Poland and their profitability. The studied relationship was stronger when profitability was measured with ROE (return on equity), than ROA (return on assets). The Spearman rho and The Kendall tau-b coefficients for ROE amounted to -21.297 and -0.154 respectively. The Spearman rho and The Kendall tau-b coefficients for ROA, are significantly lower than those, obtained for ROE and amounted to -2.766 and -0.021 respectively. Very low p-values indicate that our results are robust. The findings of our study are aligned to results obtained by Evans (1987), Glancey (1998), Colombo and Grilli (2005), Westhead and Storey (1996), Navaretti et al. 2014 and Anton (2018) for other industries and other countries.

Since the findings of various scholars on the relationship between the age of the companies and their performance, presented in the literature, are at least inconsistent or even contradictory, the contribution of this study to the literature is by providing the empirical evidence from Poland for road transportation industry. Since the studied companies poses the largest fleet in European Union, in which they hold a market share of around 17.5% of all road carriages, the results presented in this paper might also be relevant for the European Union market. Moreover, given inconsistent results obtained by other scholars, might result from the fact, the influence of age on the performance of the companies is not uniform for different countries or industries, this paper adds to the literature, which collectively can be analysed, so more general conclusion are obtained.

The following group of stakeholders who might be interested in presented results are finance providers. This group comprise banks, insurance companies, shareholders, bondholders, suppliers and others. These stakeholders, based on information obtained from publicly available financial statements can compare the results of the companies they consider whether to invest or not with recommended in this paper value ranges, and so assessing the growth and profitability potential of the companies.

This study, has however, several limitations that should be recognized. Firstly, we shall note, this study is based only on one industry. As a result, our findings might not be generalizable for other industries. Secondly, we selected the growth of sales and the profitability as proxies for performance. Although these proxies are well suited for the vast majority of private companies, there are some organizations, primarily non for profit ones, which have different objectives. The findings of this study are not suitable for these organizations. Finally, we would note, that the period of the study is relatively short and does not include the time of the recession. Performance of the companies and their undertaken strategies tend to change considerably in the stated periods.

The aforementioned limitations of the study are a good indication for further research. Empirical studies of the relationships between the age and the performance of the road transportation companies in other than Poland countries could be very interesting and could confirm if our findings are relevant globally for road transportation industry. The studies of the age influence on the performance of the companies in the times of recession could also be interesting, from the perspective of both researchers and decision makers.

## 6. REFERENCES

Abu-Tapanjeh, A. M. (2006). An Empirical Study of Firm Structure and Profitability Relationship: The Case of Jordan, *Journal of Economic and Administrative Sciences*, 22(1), p. 41-59.

Achtenhagen, L., Naldi, L., Melin, L. (2010). Business Grwoth – Do Practitioners and Scholars Really Talk about the Same Thing? *Entrepreneurial and Business Growth*, 34(3), p. 289-316.

Ahuja, G. & Majumdar, S. K. (1998). An Assessment of the Performance of Indian State Owned Enterprises, *Journal of Productivity Analysis*, 9, p. 113-132.

Ahuja, G., Lahiri, N. (2006). *Does vertical integration impact technology search? Evidence from the semiconductor industry*. Working paper, University of Michigan.

Al-Debi'e, M. M. (2011). Working capital management and profitability: the case of industrial firms in Jordan, *Finance and Administrative Sciences*, 36(1), p. 75-76.

Altman, E. I. (1968). Financial ratios, discriminant analysis and the prediction of corporate bankruptcy, *The Journal of Finance*, 23 (4), p. 589-609.

Anton, S. G. (2018). Leverage and firm growth: an empirical investigation of gazelles from emerging Europe, *International Entrepreneurship and Management Journal*, 15(1), p. 209-232.

Baah-Acquah, P., Freeman, E., Ellis, E. P. (2017). Effects of capital structure choice on profitability of oil marketing companies in Ghana (OMCs): case studies of Ghana Oil Company limited and total petroleum Ghana limited, *International Journal of Multidisciplinary Research and Development*, 4(3), p. 117-122.

Bagchi, B., Chakrabarti, J., Roy P. B. (2012), Influence of working capital management on profitability: a study on Indian FMCG companies, *International Journal of Business and Management*, 7(22), p. 1-10.

Bonett, D.G. & Wright, T. A. (2000). Sample size requirements for Pearson, Kendall, and Spearman correlations, *Psychometrika*, 65, p. 23–28.

Bottazzi, G., Grazzi, M., Secchi, A., & Tamagni, F. (2011). Financial and economic determinants of firm default, *Journal of Evolutionary Economics*, 21, p. 373–406.

Bowman, E. H., Helfat, C. E. (2001). Does corporate strategy matter? *Strategic Management Journal*, 22(1), p. 1-23.

Colombo, M. G., Grilli, L. (2005) Founders' human capital and the growth of new technology based firms: a competence-based view. Research Policy, 34 (6), 795-816.

Cooley, T. F. & Quadrini, V. (2004). Financial markets and firm dynamics. *American Economic Review*, 91, p. 1286–1310.

Corder, G. W., Foreman, D. I. (2014). *Nonparametric Statistics: A Step-by-Step Approach*. New Jersey: Wiley & Sons, Inc.

Curran, J., Jarvis, R., Blackburn, R.A. and Black, S. (1993). Networks and small firms: constructs, ethodological strategies and some findings, *International Small Business Journal*, 11(2), p. 13-24.

Dahlstrand, A.L., Stevenson, L. (2010). Innovative entrepreneurship policy: linking innovation and entrepreneurship in a European context. *Annals of Innovation and Entrepreneurship*, 1(1), p. 1-38.

Das, S. (1995). Size, age and firm growth in an infant industry: the computer hardware industry in India. *International Journal of Industrial Organization*, 13(1), p. 111-126.

Dawkins, P., Feeny, S., Harris, M.N. (2007). Benchmarking firm performance, *Benchmarking: An International Journal*, 14(6), p. 693-710.

Davidsson, P., Wiklund, J. (2001). Levels of analysis in entrepreneurship research practise and suggestions for the future. *Entrepreneurship: Theory & Practice*, 13(1), p. 19-38.

Domańska, M. (2016), Optymalizacja kosztów w zarządzaniu podstawową opieką zdrowotną i jej wpływ na wyniki finansowe, *Przedsiębiorczość i Zarządzanie*, XVII, 12(III).

Dushnitsky, G., Lenox, M. J. (2005). When do firms undertake R&D by investing in new ventures? *Strategic Management Journal*, 26(10), p. 947–965.

Evans, D.S. (1987). The relationship between firm growth, size, and age: Estimates for 100 manufacturing industries, *Journal of Industrial Economics*, 35, p. 567–581.

Furlan, A., Grandinetti, R., Paggiaro, A. (2014). Unveiling the growth process: entrepreneurial growth and the use of external resources, *International Journal of Entrepreneurial Behavior& Research*, 20(1), p. 20-41.

Gjesdal, F. (2007). Discussion of „Conservatism, growth and return on investment", *Review of Accounting Studies*, 12(2-3), p. 371–376.

Glancey, K. (1998). Determinants of growth and profitability in small entrepreneurial firms, *International Journal of Entrepreneurial Behavior & Research*, 4(1), p. 18-27.

Hall, G., Hutchinson, P., Michael, M. (2000). Industry Effects on the Determinants of Unquoted SME' Capital Structure, *International Journal of the Economics of Business*, 7(3), p. 297-312.

Jordan, J., Lowe, J., Taylor, P. (1998). Strategy and Financial Policy in U.K. Small Firms, Journal of Business Finance and Accounting, 25(1-2), p. 1-27.

Mazur, J. and Zaborek, P. (2013). Exploring links between cooperation, internationalization and profitability: A study of Polish manufacturing companies, *International Journal of Management and Economics*, 39, p. 28-50.

Megaravalli, A. V., Sampagnaro, G. (2019). Predicting the growth of high-growth SMEs: evidence from family business firms, *Journal of Family Business Management*, 9, p. 98-109.

Navaretti, G. B., Castellani, D., Pieri, F. (2014). Age and firm growth: evidence from three European countries. *Small Business Economy*, 43(1), p. 823–837.

Korneta, P. (2018). Badanie wewnętrznych determinant rentowności spółek z branży ochrony zdrowia, *Ekonomika i Organizacja Przedsiębiorstwa*, 9, 2018, p. 81-91.

Korneta, P. (2019). Determinants of sales profitability for Polish agricultural distributors, International Journal of Management and Economics 55 (1), p. 40-51.

Krzyszkowski, A., Korneta, P. (2019). Relationship between size and profitability of Polish transportation companies, *Proceedings of the 19th International Scientific Conference Business Logistics in Modern Management*, Dujak, D., Strossmayer, J., Faculty of Economics in Osijek, Osijek, p. 327-337

Kumar, P.R., Ravi, V. (2007). Bankruptcy prediction in banks and firms via statistical and intelligent techniques – a review, *European Journal of Operational Research*, 180(1), p. 1-28.

Lam, T. Y., Lee, S. K. (2012). Family ownership, board committees and firm performance: evidence from Hong Kong, Corporate Governance, *The International Journal of Business in Society*, 12(3), p. 353-366.

McGahan, A., Porter, M. E. (1997). How much does industry matter, really? *Strategic Management Journal*, 18(1), p. 15-30.

McGahan, A. M., & Porter, M. E. (2002). What do we know about variance in accounting profitability, *Management Science*, Vol. 48(7), p. 834-851.

Mitchell W. (1994). The dynamics of evolving markets: the effects of business sales and age on dissolutions and divestitures, *Administrative Science Quarterly*, 4(4), p. 575-602.

Phene, A., Fladmoe-Lindquist, K., Marsh, L. (2006). Breakthrough innovations in the U.S. biotechnology industry: the effects of technological space and geographic origin, *Strategic Management Journal,* 27(4), p. 369–388.

PWC (2016) The Market of Polish Drivers. Resource document. PriceWaterhouseCoopers [available at https://www.pwc.pl/pl/pdf/pwc-raport-rynek-pracy-kierowcow.pdf, access May 2019].

Raymond, W., Mohnen, P., Palm, F. and Van Der Loeff, S. (2010). Persistence of innovation in Dutch manufacturing: is it spurious? *The Review of Economics and Statistics*, 92(3), p. 495-504.

Ross, S.A., Westerfield, R., Jordan, B.D. (2008). *Fundamentals of Corporate Finance*, Asia: Tata McGraw-Hill Education.

Siddiqi, A. F. (2014). An observatory note on tests for normality assumptions, *Journal of Modelling in Management*, 9(3), p. 290-305.

Stinchcombe, A. (1965). Organization-creating organizations, *Society*, 2(2), p. 34-35.

Tyagi, S., Nauriyal, D. K. (2017). Firm level profitability determinants in Indian drugs and pharmaceutical industry, International Journal of Pharmaceutical and Healthcare Marketing, 11(3), p. 271-290.

Westhead, P., Storey, D. (1996). Management training and small firm performance: why is the link so weak? *International Small Business Journal*, 14(4), p. 13-24.

Xiping, P., Jinghua, S., Hongliang, Z., Wenlan, K. (2015). Relationship between Corporate Social Responsibility and Financial Performance in the Mineral Industry: Evidence from Chinese Mineral Firms, *Sustainability*, 6, p. 4077-4101.

Yazdanfar, D. (2013). Profitability determinants among micro firms: evidence from Swedish data, *International Journal of Managerial Finance*, 9 (2), p. 151-160.