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# The impact of industry, firm age and education level on financial management performance in small and medium-sized enterprises (SMEs)

## Evidence from Turkey

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### Abstract

**Purpose** – Small- and medium-sized enterprises (SMEs) are crucial for socio-economic growth due to their significant role in creating new workforce, gross domestic product increase, innovation and entrepreneurship. This paper aims to examine financial management performance in SMEs with regard to industry, firm age and education level of owner/managers differences.

**Design/methodology/approach** – The data used in the study are collected from 188 SMEs through structured questionnaires, and three hypotheses regarding the associations are tested by using structural equation modeling.

**Findings** – Findings of one-way ANOVA tests indicate that performance in financial management practices has a strong and positive correlation with education level of small business owner/managers, whereas no significant difference is found regarding SMEs operating in different industries. For the impact of company age, independent samples *t*-test is conducted, and a meaningful difference between small- and medium-sized companies which are five years or older and younger is found.

**Research limitations/implications** – This study shows that a significant difference for age of an SME is present between over and under five-year-old SMEs, with respect to financial management performance, which is an important finding for both small business and financial management literatures. The tests regarding the particular hypotheses about education level of SME owner/managers indicate that education level of SME owner/managers significantly impacts financial management performance.

**Practical implications** – The present study provides important practical implications. First, the importance of education level of owner/managers on SME financial performance is highlighted. Second, strong empirical support is found for the impact of company age on SME performance, which might be discussed as the importance of accumulation of knowledge of the owner/managers and the changes required with the growth patterns of the company, with increasing company age. Third, the study shows that industry differences do not exhibit a significant performance variation factor in financial management of SMEs, with respect to other demographic factors. Overall, these contributions help us better understand the financial management performance indicators in small and medium sized businesses.

**Originality/value** – This study focuses on company age, education level and industry differences with respect to financial management performance in SMEs in emerging economies, therefore provides additional empirical evidence to a research area where very few empirical studies exist.

**Keywords** Small- to medium-sized enterprises, Emerging economies, Business performance, Financial management

**Paper type** Research paper

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## Introduction

Small- and medium-sized enterprises (SMEs) play a crucial role in every economy due to their significant contribution to new job creation, entrepreneurship and innovation (Vermoesen *et al.*, 2013; OECD, 2005). However, these economic units face several challenges in their management systems, lack of an efficient and effective financial management being a major one. Despite the importance and the dominance of SME sector in every economy, small business research is a fairly fresh research field, particularly in developing economies (Bruton, 2013).

In Turkey, as in most developing economies, majority of academic work focused on investigating financial resource challenges of SMEs (Öndes and Gungor, 2013; Şahin, 2011; Çetin *et al.*, 2011; Güler, 2010; Koyuncugil and Ozgulbas, 2006), as acquisition of funds is an important and common problem for many SMEs, which can even lead to failure of these business units (Jindrichovska, 2013; Abuzayed, 2012; Baños-Caballero *et al.*, 2012; Kaya and Alpkan, 2012). Mainly due to this trend in mainstream small business research, amount of research studies analyzing financial management practices and their performances in SME's remained fairly low, to date.

To fill this gap in the literature and contribute to the existing body of knowledge with empirical evidence from a developing economy, this study is designed to test three hypotheses developed for investigating the relationships between the financial management practice performances and the impact of company age, industry variance and education level of SME owner/managers. The selection of small- and medium-sized businesses in this study from Turkey is notable for three main reasons. As Turkey is a developing economy, accessing reliable and up-to-date data on financial statements of small- and medium-sized companies is very problematic due to lack of official databases and serious transparency issues (OECD, 2005). Thus, the methodology of this research forms an example of how data collected through a structured survey from the owners/managers of SMEs can be used for studying the financial management dimension of overall managerial performance in small- and medium-sized companies. Second, previous academic studies on financial management of Turkish SMEs mainly targeted the financial resource challenges of SMEs due to the lack of capital and inadequacy of external funding in Turkey, which is also a common problem for SMEs in every developing economy. Current study aims to address this gap in the literature by focusing on to the very significant problem of the efficient and effective management of the obtained funds and searching an answer to an important research question by investigating whether variations exist between financial management performance and the determinants of company age, industry variance and education level of SME owner/managers, as suggested by the previous studies of Dickson *et al.* (2008). Finally, as stated by Honig (1998) and Thompson *et al.* (2012), analyzing developing economies can greatly help to understand the social and institutional challenges undergone in the urban and relatively underdeveloped urban areas of developed economies.

The study is structured as follows. Section 2 outlines different perspectives to SME concept within the small business literature and the current situation of SME sector in Turkey, together with previous theoretical and empirical studies on financial management practices and performance in small businesses. Section 3 presents the research question and hypotheses to be tested, with selected previous studies on hypotheses' focus areas. Section 4 describes the methodology of the current empirical study. Findings are presented and discussed in Sections 5 and 6. Section 7 concludes.

## Literature review

*The small- and medium-sized enterprises concept*

SME categorizations vary across economies. Sometimes institutions of the same country can have different SME definitions (Yurttadur and Kaya, 2012). There are around 30 different SME definitions in the literature (Sannajust, 2014), which naturally hardens SME research, particularly conducting of comparative studies.

Traditionally, small market share and independency were two main indicators of being an SME (Storey, 1994; Great and Bolton, 1971), whereas more recent definitions consider workforce characteristic as a common and practical tool for SMEs. According to OECD, being an SME requires "employment of fewer than a given number of employees, which varies across countries" (OECD, 2004). In Turkey, Eurozone, Turkey and several countries, the maximum SME employment is 250, whereas US and Canada SMEs have a higher upper limit of 500 employees.

In Eurozone (EU28), SME categorization is a bit more complex, taking "independence" factor besides employment and annual turnover criteria and number of employees in defining an SME (Muller *et al.*, 2014). In USA, similarly, definition of a small business is "the one that is independently owned and operated, is organized for profit, and is not dominant in its field" (SBA, 2016). US categorization also has an annual output criterion, which is differentiated for major industries.

While their definitions vary, small- and medium-sized businesses significantly contribute to economic development (OECD, 2014) and their role on the real gross domestic product (GDP) growth, workforce creation and fighting against poverty is recognized at a global scale (Muller *et al.*, 2014; OECD, 2014; Chowdhury, 2011). In developing economies, this role is more critical, as the corporate sector is comparably less developed (Narteh, 2013; Floyd and McManus, 2005). However, SME sector is vital for developed economies too, as SMEs account for 50 per cent of GDP in high income countries (Ayyagari *et al.*, 2007). In Eurozone, SMEs are regarded as "backbone of the European economy" and account for 99.8 per cent of all non-financial businesses, 58 per cent of total value added and 66.8 per cent of total workforce (Briozzo and Cardone-Riportella, 2012; Muller *et al.*, 2014; Gagliardi-Main *et al.*, 2013; Wymenga *et al.*, 2012). In Japan, 99.7 per cent of all companies are SMEs, supplying 70 per cent of all employees, and more than 50 per cent of all added value of manufacturing industry (Chusho Meti, 2013).

*Small- and medium-sized enterprise sector in turkey*

In Turkey, SMEs are categorized on a quantitative basis. The latest SME categorization regulation was enforced on November 04, 2012, grouping the SMEs into three categories of micro enterprises and SMEs with respect to their employee numbers and annual revenues, as shown in Table I.

| Company categories | No. of employees | Annual turnover |
|---|---|---|
| Medium-sized | <250 | <US$13,651,877 |
| Small | <50 | <US$2,730,375 |
| Micro | <10 | <US$341,296 |

**Source:** OECD, 2014 (figures are converted from TL to US$ with the exchange rate of CB of Turkey as of 15 June, 2016)

**Table I.**
SME categorization in turkey

There are in total 2,641,961 SMEs in Turkey as of 2012 (TUIK, 2015), and these businesses amount to 99.8 per cent of all registered enterprises in the country. Within the SME sector, 97 per cent are micro enterprises with 0-19 employees, with the highest percentage among OECD member states (OECD, 2014). After the global economic turmoil of 2008, the SME sector in Turkey showed a rapid recovery, similar to that of other emerging economy SMEs. While the number of small- and medium-sized businesses which had a fast growth rate in 2002-2007 declined sharply between 2008 and 2010, the growth in number of businesses again gained pace in 2011 and 2012 (Turkish Statistical Institute Reports, 2002-2012). The performance of SMEs after the crisis were more positive in terms of workforce, as the number of registered employees in SMEs increased from 7,407,101 in 2009 to 9,517,367 in 2012. The worst performing indicator for the Turkish SMEs was the value added, as the share of SME value added in the aggregate value-added decreased from 56.2 per cent in 2006 to 53.9 in 2012.

The problems related with value-added creation can be linked to inadequate financial resources of SMEs which eventually lead to low technology levels and R&D spending in these economic units, as well as insufficient education level and managerial capabilities of SME owner/managers (KOSGEB, 2011). To address these negativities and provide solutions for existing and new small businesses, Turkish government undertook several initiatives. Besides the problems of SME sector, the facts that Turkey is ranked as 55th in the "World Bank Doing Business Report", and 79th in starting a business additionally indicated that regulatory improvements are urgently required for the facilitation of new venture creations and investments in existing businesses. As to develop the national framework of these initiatives, two commission reports were prepared separately for the "SME sector" and "entrepreneurship" in the national 10th Development Plan of 2014-2018, which was a first to differentiate between these two topics. In this report, major action plans of "providing new support and financing tools for innovative and information-based enterprises, improvement of education system for enhancing entrepreneurship and competitiveness" and "enforcing institutional regulations and improvements for enterprises" were announced as the key action steps for the improvement of business environment for SMEs.

*Financial management performance in small- and medium-sized enterprises*

Financial management is "concerned with understanding factors that determine the value of a business's uncertain cash-flows over time, and with management of these factors through careful financial planning and control and sound financial decision-making" (McMahon *et al.*, 1993). Financial management has crucial importance in any enterprise and is regarded as the core of the management system in a small businesses (Meredith, 1986). As stated in a wealth of studies, due to insufficiencies in the conduct of financial management, SMEs can experience significant challenges with respect to financial and overall performances, as most small businesses fail due to poor financial management (Hall and Young, 1991).

While there are vast number of studies on financial management in large corporations, SME financial management literature has been a research area that has been developing within the past decades and has since then been largely dominated by "financial resource challenge" of SMEs rather than a "managerial" perspective and empirical studies focusing on SME performance with respect to various practices of financial management has been increasing only recently (Abanis *et al.*, 2013; Fatoki, 2012; Jindrichovska, 2013; Kennedy *et al.*, 2006; Nguyen, 2001; Okafor, 2012; Peel and Wilson, 1996; Pham, 2010).

In Turkey, the facilitation of SMEs' access to finance, particularly during the post-crisis period, has been prioritized by the governmental authorities and the financial institutions, as financial resource limitations have been regarded as one of the main impediments of growth in SME sector. For example, KOSGEB, the governmental body in charge of SMEs in Turkey, increased the SME guarantee volumes from 75 million in 2007 to 1.553 million TL in 2012. However, researchers argue that the lack of an effective and efficient financial management and problems in the conduct of major financial management practices are also important and are among the main challenges regarding the overall management system in small- and medium-sized companies (Uluyol, 2013; Koyuncugil and Ozgulbas, 2006; Cetin, 2006). As stated in a number of studies, financial management has a significant potential to elevate or diminish the performance of a small- and medium-sized company and can even lead to failures of these economic units (Öndes and Gungor, 2013; Şahin, 2011; Çetin, Akyüz and Genç, 2011; Güler, 2010; Koyuncugil and Ozgulbas, 2006).

As for the sources of finance, commercial banks are still the most common source for SMEs, which mainly results from the underdeveloped financial system in terms of angel investors, venture capital companies and credit guarantee systems. However, many SMEs experience problems in reaching bank finance, in terms of collateral, credibility and financial statements. As a result, the working capital needs for survival and growth have to be supplied through equity financing (Şahin, 2011), family financing or personal credit lines (KOSGEB, 2011). Apart from funding problems, SMEs in Turkey have other finance-related challenges, including the inefficiencies in the use of financial resources (Uluyol, 2013) and mismanagement in working capital constructs, namely, cash, inventories, payables and receivables (Uluyol, 2013; Kaya and Alpkan, 2012). Other financial factors that affect the financial and overall performance of SMEs can be listed as lack of overall and financial planning, lack of feasibility analyses prior to making important investment decisions, inadequate bookkeeping systems of financial records and lack of financial literacy of SME owners for understanding the financial reports (Kaya and Alpkan, 2012; Alkış and Temizkan, 2012; Güler, 2010; Kutlu and Demirci, 2007; Arslan, 2003).

## Research question and hypotheses

Despite the growing interest of researchers on separate conducts of financial management in SMEs, such as working capital management or financial reporting practices, the impact of demographic and industry determinants on SME financial management is a topic which attracted less interest from researchers, which can be attributed to the freshness of the research field.

In 2005, MacKay and Phillips investigated the impact of industry differences on financial structures. The results of their study showed that industry differences have a significant impact on financial decisions (MacKay and Phillips, 2005). However, a consensus could not be reached as the findings of other studies about the industry-fixed effects on financial strategies and actions differed from each other. For example, Balakrishnan and Fox (1993) found that while 52 per cent of capital structure variation can be explained by firm effects, only 11 per cent can be attributed to inter-industry differences, whereas Michaelas *et al.* (1999) found out significant industry fixed effects for only short-term debt use. As there are contradictory empirical findings on the impact of industrial differences on financial factors in SMEs, the following hypothesis is formulated and tested:

*H1.* The industry difference significantly affects financial management performance in SMEs.

Previous studies have shown that the three years' of age have a crucial importance for SMEs as most SMEs cannot survive after the first three years of their lifetime (Lukacs, 2005). While the argument that most SMEs fail in their early years is a general acceptance among SME scholars, the number of empirical studies attempting to measure the correlation between the SME age and performance is interestingly very limited. Among these, a leading study that can be mentioned was conducted by Van Auken in 2001. The researcher studied the financial management decisions of the technology SMEs in USA and found out that those businesses needed assistance particularly at their seed stages to reach the external capital resources for the financing of growth, marketing and production-related requirements (Van Auken, 2001). As this finding implies, the needs and requirements of an SME difference varies significantly while it goes through different life-cycle stages. The aging of the business brings the experience and knowledge accumulation to the owner, both in financial management and other managerial areas. For example, SME owners become "more sophisticated and experienced in their ability to negotiate with providers of capital, as their business develops" (Ang, 1992). SME age is also recently introduced on 202 companies in Mexico, who found a positive correlation between SME age and SME competitiveness. Similarly, in 2008, Wu collected data from 60 SMEs in China, and the results of the study showed that as SMEs grow, the firm's size, age and similar factors significantly influence the capital structure, the types and extent of funding and the preference of financial resources. Therefore, in this study, specific hypotheses are developed and tested to provide further empirical evidence for the clarification of the relationship between financial management performance and SME age as follows:

*H2*. The age of SMEs significantly affects financial management performance.

The research question of the "effect of education levels of SME owner/managers on the quality of overall management system and performance in an SME" has been analyzed in recent SME management studies, within the broader "managerial characteristics in SMEs" perspective, and it has been a general acceptance among management scholars that the owners and senior managers of SMEs need the proper education and training to have competitive businesses (Gunasekaran *et al.*, 2011). For instance, Hausman (2005) proposed that that innovativeness in SMEs is positively correlated to the relevant education and training of managers. Similarly, the findings of Von's (2005) study indicate that the strategic understanding in an SME is stronger where the managers have the adequate managerial skills. Specifically focusing on SME finance, Van Auken argued that "the lack of information about capital alternatives and the specific funding requirements may cause owners to ineffectively pursue some sources of capital while ignoring others" (Van Auken, 2001). Parallel to his findings, Seghers, Manigart and Vanacker investigated 125 newly established small businesses in Belgium and found out that the entrepreneurs who had a business education and a previous work experience of accountancy or finance had a broader knowledge of finance alternatives when managing their start-ups (Seghers *et al.*, 2012). While there is some empirical academic work conducted in this area, further empirical evidence is still needed Thus, to investigate the impact of education level of SME owner/managers on SME financial performance, the following hypotheses is formulated:

*H3*. Financial management performance is higher for SMEs with higher education level of owner/managers.

## Research methodology

*Sample and data collection*

Within the research study, survey method is utilized for collecting data. The use of surveys as the instruments of data collection is a common method in SME studies (Abanis *et al.*, 2013 Fatoki, 2012; Nguyen, 2001; Okafor, 2012; Pham, 2010), as obtaining financial statements which reflect the actual financial situation of the businesses is challenging when conducting research on SMEs particularly in developing economies due to transparency issues and lack of official databases (Gunesakaran, 2000; OECD, 2005). In addition to that a large number of studies show that the subjective perceptions of business owners and executives are consistent with objective measures in SMEs (Duesing, 2009; Covin *et al.*, 1994; Venkatraman, 1990; Dess, 1987; Dess and Robinson, 1984).

Before distributing the survey questionnaire to potential respondents, a pilot questionnaire was collected from 30 SME owner/managers to verify the reliability of the measures and scales utilized in the study. For target population, SMEs in İstanbul city of Turkey are defined as the target population, as SMEs in İstanbul can be regarded as a representative of SMEs in the country. The sample was drawn from that population using non-probability sampling method. In Turkey, SMEs include many forms of business such as sole proprietorships, limited liability companies and joint stock companies. Within the SMEs, while some establishments have a separate finance department, SMEs in general do not have the required funds to set up a finance department or employ a finance manager. Therefore, companies in every legal form and with or without a finance/accounting department are included in the study.

### *Variables and measures*

Following the literature on financial management practices in SMEs (Nguyen, 2001; McMahon *et al.*, 1993), the financial management practices that significantly impact SME performance in Turkey are taken from the literature (Uluyol, 2013; Öndes and Gungor, 2013; Şahin, 2011; Çetin *et al.*, 2011; KOSGEB, 2011; Güler, 2010; Çetin and Bıtırak, 2009; Koyuncugil and Ozgulbas, 2006; Topal *et al.*, 2006; Arslan, 2003) and used in the study. These practices are financial planning practices, working capital management practices (cash management practices, inventory management practices, receivable management practices), fixed-asset management practices, financial reporting and analysis practices.

For measuring the performance for each of these practices, Nguyen's (2001) questionnaire and scales are used with a nine-point Likert scale measurement system and eight questions for each financial management practice. Although a number of survey instruments are developed by researchers for investigating financial management conduct in small- and medium-sized companies (Abanis *et al.*, 2013; Fatoki, 2012; Nguyen, 2001; Okafor, 2012; Pham, 2010), the survey instrument developed by Nguyen (2001) is adopted, as it is specifically designed for measuring the performance of financial management practices in SMEs and has a broader range of survey items, which allows for a deeper understanding of the practices utilized in the enterprises.

### *Data analysis*

For testing the research model, the data are processed in the Statistical Package for the Social Sciences (SPSS) 19 program. First, principal component analysis by using the SPSS exploratory factor analysis is conducted. Following that, structural equation modeling (SEM) method is used to test the hypotheses. In the study, 188 questionnaires are used and collected on-line from the owners and top managers of approximately 900 SMEs, with an overall response rate of 21 per cent.

## Analysis and interpretation

### *Factor analyses*

Before conducting hypotheses tests, existence of any potential multicollinearity in the data set was investigated through the variance inflation factor (VIF), and the VIF values of financial management practices were found at a low and acceptable level.

*Hypotheses testing*

The results of the one-way ANOVA depicted in Table II show that there is no significant correlation between financial management practice performance and the industry of SMEs (F = 1.8450, $p$ = 0.122). Therefore, *H1* is not supported. It can be stated that the industry of SME does not significantly affect SME financial management performance.

For investigating the impact of SME age on financial management performance, the sample is categorized into two groups. The first group is formed with SMEs which are equal to or younger than five years of age, whereas the second group represents the SMEs that are over five years of age. After setting up the age variable, independent samples $t$-test is conducted.

As shown in Table III, the result of the $t$-test shows $p$ value as $p$ = 0.017, which shows a significant difference between financial management performance regarding the age of SME, as $p$ value is less than 0.05. Therefore, *H2* is supported. Table III also illustrates that the SMEs with the age equal to or under five perform worse than SMEs over the age of five financially. This result is in line with the analysis stated by Salazar *et al.* (2012) and the other researchers.

The results of the one-way ANOVA depicted in Table IV indicate a significant correlation between financial management performance and the education level of SME owner/managers ($F$ = 7.9100, $p$ = 0.001). Therefore, in line with the previous empirical studies (Okoro, 2007), *H3* is supported. For investigating which education level has the highest impact on financial performance, Scheffe reliability test is conducted. The results of the Scheffe test are illustrated in Table V and indicate that, as education level increases,

| | Industry of SME | $N$ | Mean | SD | $F$-value | $p$-value |
|---|---|---|---|---|---|---|
| Financial management performance | Manufacturing | 53 | 6.4346 | 1.586 | 1.8450 | 0.122 |
| | Commerce | 45 | 6.4779 | 1.439 | | |
| | Services | 66 | 6.8843 | 1.382 | | |
| | Construction | 12 | 5.7483 | 1.794 | | |
| | Other | 12 | 6.8003 | 1.643 | | |

**Table II.** Results of one-way ANOVA test for the impact of industry of an SME on financial management performance

| | Age of SME | $N$ | Mean | SD | $F$-value | $p$-value |
|---|---|---|---|---|---|---|
| Financial management performance | age $\leq 5$ | 58 | 6.0967 | 1.677 | −0.4000 | 0.017 |
| | age $> 5$ | 130 | 6.7990 | 1.385 | | |

**Table III.** Results of independent samples $t$-test for the impact of age of SMEs on financial performance

| | Education level of owner/managers | SME | $N$ | Mean | SD | $F$-value | $p$-value |
|---|---|---|---|---|---|---|---|
| Financial management performance | High school | 33 | 5.697 | 1.280 | 7.9100 | 0.001 | |
| | University | 91 | 6.668 | 1.505 | | | |
| | Services | 64 | 6.917 | 1.472 | | | |

**Table IV.** Results of one-way ANOVA test for the impact of education level of SME owner/managers on financial management performance financial performance also increases ($\mu$ masters/doctorate = 6.917; $\mu$ university = 6.668; $\mu$ high school = 5.697).

*Discussion of findings*

*In this study*, difference tests are used for measuring the impact of education level of SME owner/managers, SME age and industry on SME financial practice performance. The following conclusions are derived:

- The results of the one-way ANOVA tests for analyzing the impact of education level of SME owner/managers on financial management performance indicate a meaningful difference between three different education levels.
- The results of the one-way ANOVA tests for analyzing the impact of industry of SME on financial management performance do not indicate any meaningful difference between five major industries of SMEs.
- The results of the independent samples *t*-tests for the impact of age of SME on financial management performance do indicate a meaningful difference between two age groups of SMEs are below or over five years of age, the older SMEs performing better.

As stated in the hypotheses building part, age of an SME and its relationship with performance has been an interesting topic for scholars, mainly due to the high failure rates of SMEs with less than three years of age. It is discussed by a mainstream of scholars that weak financial management is a major factor in SME failures. As Salazar *et al.* (2012) stated:

> The main causes of business failure are the lack of financial planning, limited access to funding, lack of capital, unplanned growth, low strategic and financial projection, excessive fixed-asset investment and capital mismanagement" (Salazar *et al.*, 2012).

The topic of SME age is also closely related to SME life cycle, as the financial management sophistication levels of SMEs increase as the company ages and thus goes through different life cycle phases. Therefore, with the aim of adding further empirical findings to the literature, a specific hypothesis for investigating SME age and financial performance is tested. The results indicate that, SMEs which are five years or younger have lower financial management practice performance than SMEs with over five years age, supporting the previous research findings. Therefore, it can be stated that the age of SME significantly affects financial management performance.

The industry of SME has also been another factor of discussion for scholars conducting research on SMEs. While some of the previous empirical studies indicated that industry differences influence financial management of SMEs (Pham, 2010; MacKay and Phillips, 2005), other studies produced mixed results. Findings of the current study did not indicate a

**Table V.** Results of Scheffe test for the impact of education level of SME owner/managers on financial management performance

| (I) Education | | | Mean difference (I-J) | SE | Sig. |
|---|---|---|---|---|---|
| Scheffe | High school | University | −0.97094* | 0.29654 | 0.005 |
| | | Masters/doctorate | −1.21970* | 0.31274 | 0.001 |
| | University | High school | 0.97094* | 0.29654 | 0.005 |
| | | Masters/doctorate | −0.24877 | 0.23807 | 0.580 |
| | Masters/doctorate | High school | 1.21970* | 0.31274 | 0.001 |

**Note:** * The mean difference is significant at the 0.05 level significant impact of SME industry on financial management performance, similar to the findings of Balakrishnan and Fox (1993). This result might be discussed as the impact of demographic factors such as the personal characteristics of the SME owner/managers affecting managerial skills and abilities, thereby causing a stronger effect on financial performance than industrial differences.

As the last hypothesis, education-level differences of SME owner/managers were tested. In the literature, the number of empirical studies conducted to measure the education-level impact on financial management performance is very limited, despite the general acceptance that higher levels of education are linked to higher performance. Therefore, a specific hypothesis is proposed and tested with empirical data to fill that important gap in the literature. Findings indicate that the education level of SME owner/managers has a significant impact on financial management performance, as hypothesized. This finding also supports the findings of the research study conducted by the leading SME researchers Gunasekaran *et al.*, 2011.

## Conclusion and implications

SMEs form a large part of economy and are seen as the drivers of socio-economic development. Despite their significant achievements, particularly after the recent global financial crisis, Turkish SMEs still are faced with several challenges, such as insufficient managerial capabilities of SME owner/managers, lack of trained personnel, poor access to financial resources and low utilization of new technologies. Within these, problems related with financial management have a unique situation, as finance function has a central role in the overall management system in SMEs. Within this respect, this study aims to offer new empirical evidence on the relationship between financial management performance and industry, company age and education level in SMEs. Parallel to previous research studies, education level of SME owner/managers and company age is found to have a significant impact on financial practice performance. For industry variance, no meaningful difference is detected.

This might be an important implication for formal authorities and policy builders, indicating that higher education levels as well as longer experience are associated with higher financial performance in small and medium sized companies. This finding also supports the strategic importance of education level of entrepreneurs and SME owner/managers, as increasing education level causes an increase in the managerial capabilities and skills of SME owner/managers, which would result in increased performance, both in overall management system and financial management of an enterprise. As entrepreneurial education has been set as a "strategic factor" for the development of SMEs by UNDP and local governmental programs, such as latest strategic program of KOSGEB, the formal SME development institution of Turkey (KOSGEB, 2011), the efforts of public bodies for advancing the financial knowledge and awareness of SME owner/managers for improved SME performance remarkably increased within the recent years. However, trainings, workshops and conferences about the emerging business management concepts and technologies are still required for the SME owner/managers to gain advanced levels of managerial education and experience and make their businesses competitive and resilient.

As for the SME age determinant, findings of this study support previous propositions that due to the knowledge accumulation and increasing levels of expertise of the SME owner/managers over time, their businesses perform better with age. As the enterprise ages, the SME owner/managers get more experienced about the challenges and develop their skills further, which can cause them to manage their enterprises more efficiently and skillfully, thereby increasing the efficiency of conduct of financial management. Studies indicate that it is crucial for a small business to survive the first three to five years where the most challenging problems are experienced and have to be solved. Therefore, to get assistance in these initial stages can differentiate between the survival or failure of a small business. The type of assistance here can range from access to financial resources to provision of managerial training by the public authorities, universities or private training companies, which will increase the competitiveness levels of SMEs.

The research findings also provide important implications for policy-makers, chambers of commerce, universities and other third parties. For the public authorities, the study suggests the low-cost funds provided by governmental bodies such as KOSGEB would not be efficiently utilized if the financial management skills and understanding of the SME owners and entrepreneurs are not improved. Therefore, the government has to provide training programs to SME owner/managers, taking financial awareness and management, to the center, to increase the performance and competitiveness of SMEs. SMEs are also members of commerce and industry associations, which play a guiding role in the development of private sector within the economies. These organizations are not only valuable means for creating new business opportunities and expanding existing businesses for SME owner/managers but also important providers of trainings and seminars for helping the entrepreneurs and business owners develop their businesses further. Within this study, a specific hypothesis is tested to measure the impact of education-level differences on financial management performance, where the result of data analysis indicated a significant positive correlation. This finding provides a very valuable insight for entrepreneurial education in universities, suggesting that the efficient conduct of financial management in entrepreneurial entities has significant practical implications in SME management education. Finally in Turkey, the focus of the current SME trainings given to entrepreneurs and small business owners is mostly about finding alternative ways financing for SMEs. The current study states that this has to be reconsidered by the training organizations and importance should be placed upon the proper management of financial, human and technological resources.

### *Limitations of the study and future work*

In this study, owners or managers of randomly selected SMEs are given structured survey questions for determining the financial management practice performance of SMEs with respect to industry, company age and education level variances. The SME population consists of companies from every industry and scale and from micro to medium. This general sample might be analyzed from a more specific point of view in future studies. Future studies can target the investigation of specific performance criteria such as profitability, ROA or ROE in these economic units.

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