How does innovation affect financial and operational performance?

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ABSTRACT

Processing and proper and effective usage of information is the main necessity for companies to survive in today's globally competitive market conditions. Here in this point the term "innovation" appears as a value-adding process to information in turning innovation into commercial success and ensuring the competitive capability of the company in today's conditions. Innovation, Research and Development are deeply connected with each other. Ensuring innovative progress is totally dependent on R&D activities. Innovative processes provide commercial success in product/services and an increase in productivity which allows companies to have a sustainable competitive advantage. Companies can increase their market shares. This provides an improvement in operational processes in today's competitive conditions. In this study, we investigated the relationships between innovation performance, operational performance and financial performance. For this purpose, a survey was conducted which 111 companies participated in this survey. The research is based primarily on a quantitative approach using a questionnaire survey.

Key words: Innovation, innovation performance, operational performance, financial performance, software industry.

INTRODUCTION

In today's information age, it is necessary to be able to use information effectively and creatively as well as having knowing. At this point, "innovation" emerges that will add value to knowledge and make social benefit effective in terms of both economic and sustainability. In a sense, ensuring the development of innovation depends on R&D. Increasing the level of R&D enables the development of innovation. The increase in efficiency achieved as a result of innovation will also provide a sustainable competitive advantage. Developing and changing technology has enabled companies around the world to remove their borders in the transfer of goods and services. With the removal of the borders, companies entered into a competitive race to spread their products and services to wide geographies, which made the competition global. While there are dozens of companies producing the same goods and services in the country, the competition of international companies has made innovation in the internal and external production and management processes of the company continuous and mandatory. Companies that can adapt to the continuity of innovation have survived, and companies that cannot, as natural selection theory indicates, have to leave the sector or change their field of work.

Although innovation is used today, the roots of the concept go back to the past. According to Smith (1776), modern society has been characterized by continuous innovation (Kurz, 2008). On the other hand, Schumpeter (1911) describes the concept of innovation as a product that the customers do not know yet or adding new qualities to an existing product, creating a new production process, creating a new market, finding a new resource for raw materials or semi-finished products. Companies should engage in innovative activities to maintain their existence, adapt to changes and manage change well in the increasing competition with globalization. Firms that do not perceive...
the changes in consumers' wishes on a product basis will lose their competitive advantage in the market if they do not launch new products. Companies should perceive change well and have a structure with an innovation culture to adapt. Today, most of the companies that take risks and realize innovations that differentiate and create value are market leaders. Recently, many researchers have discussed the impact of various types of innovation in organizational contexts on the long-term life, performance and profitability of the business (Banbury and Mitchell, 1995; Daneels, 2002; Geroski et al., 1993; McGrath et al., 1996; Roberts, 1999). Baldwin (1996) study shows that innovative businesses, according to non-innovative; can be more competent in various subjects such as marketing, finance, production and human resources (Yavuz, 2010: 144). R&D investments, which are indicators of innovation activities, are affected by various company characteristics such as the size, age, management and organizational structure of the company, and the sector in which it operates (Calıpinar and Bac, 2007).

Innovation is the process of renewing the products, services and strategies of companies to keep up with the rapidly changing technology and to survive in the increasingly competitive environment. All innovations have to be marketable. The invention is the creation of a new idea to create a product, process or service. When the invention is transformed into a socially usable product, it becomes an innovation (Martin and Martin, 2004). Innovation has become an important concept that the whole world has been emphasizing and working on, especially for countries and companies. In terms of countries, the most important reason for this is that it plays an important role in sustainable development, social welfare, increase in employment, providing national competitive advantage and increasing the quality of life. When considered for companies, it is a very important tool that enables entry into new markets, reduces costs, thus increases productivity and profitability, increases product and service quality. This study will examine the impact of innovation performance on financial and operational performance. For this reason, a survey was conducted with 111 companies and the results were analyzed. Therefore, the purpose of this research is to investigate the relationship between firms' innovation performance and operational and financial performance. Based on a sample of 111 firms drawn from the 349 firms in Turkey, we tested our conceptual framework. We selected Turkey as a sample. This is because it is an emerging country and its companies require innovations for their financial performance.

The remaining parts of this study are organized as follows. The “Literature review” provides an overview of the innovation, financial performance and, operational performance. The “Hypotheses” describes the main hypotheses of this study. "Research Methods" explains the methods of study and measurement of the constructs, The findings are presented together with a discussion in “Results and discussion.” Finally, “Conclusions, implications, and limitations” gives a summary of the findings and limitations.

LITERATURE REVIEW

Innovation

By innovating, businesses not only catch up with technology but also ensure customer satisfaction by meeting changing customer needs and requests (Naktiyok, 2007). Innovation is the management of all activities related to idea generation and technology development process (Trott and Paul, 2008). According to the definition by the OECD, “An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” (OECD-Eurostat, 2006). It should not be confused with R&D and innovation. Although these are related to each other, innovation does not occur as a result of every R&D, and not all innovations are formed as a result of R&D. R&D generates new information, materials, products or services and ensures that information is collected systematically. On the other hand, innovation includes all activities in creating a new product or production process, from scientific research to innovation, development and commercialization (Güler and Kanber, 2011).

According to Audretsch and Lehmann (2005), it is wrong to consider innovation only as an application. Unless innovation is commercialized, it will make no economic sense. Making an invention fully functional requires turning it into an innovation successfully (Sanrı, 2011). According to Ulusoy et al. (2013), factors affecting the innovation success of companies can be grouped under two groups such as indigenous and exogenous parameters.

Internal parameters: These are firm general characteristics, intellectual capital (human, social and organizational capital), organizational structure (formalization, centralization and communication), organizational culture (firm decision-making processes and open communication channels, management support, reward system, etc.) and firm strategies (collaborations, knowledge management, investment and cost strategies, competitive pressure, etc.).

External parameters: These are parameters related to industrial conditions and relationships, such as industry and market structure, public regulations and incentives, external financial resources, and external innovation barriers.
Globalized competition brings change and development. When we examine companies that ensure continuity in competition, we can see that their performance indicators are analyzed correctly. Besides, possible innovation steps are also analyzed to be one step ahead of the competition. This ensures the continuity of innovation performance. Innovation directly affects company performance; because being innovative, measured by the number of new products or new services, increases the company’s sales and affects management systems and employee productivity. Therefore, it is expected to affect the performance of the company (Semuel et al., 2017). Innovation can be made in different ways: the emergence of an original product, the development of an existing product by restructuring as a higher product, reaching new markets or expanding the existing market share and making the strategies and activities of the organization more effective (Lemon and Sahota, 2004).

The concept of creativity can be defined as the creation of new ideas that can result in innovation. Innovation happens when new ideas are put into practice and turn into a viable, commercialize and value-creating output. According to Güleş and Bülbül (2004), "While creativity is an individual process, innovation is an organizational activity". Companies should provide an appropriate environment for their employees to develop new ideas and thoughts. Creativity is a concept based on individual imagination, and new ideas and thoughts should be encouraged to achieve innovation.

### Innovation performance

There are various studies to measure innovation performance. The most important of these is the Oslo Guide, which was created as a result of the research carried out by the Organization for Economic Cooperation and Development (OECD) and the European Commission. With this guide, it is intended to set forth standards for the definition and measurement of innovation. It has also studied this subject in institutions such as INSEAD, The Economist Intelligence Unit, and the World Bank (Karaata, 2012).

Samuel et al. (2017) stated that innovation performance is related to how quickly and effectively ideas are implemented and how much value these ideas create.

One of the techniques used to measure innovation performance is the Balanced Score Card technique prepared by Kaplan and Norton (2002). There are 4 sections in the Balance Score Card technique: learning and growth of the organization, business process, customer and financial perspectives. According to Norton and Kaplan (2002), performance indicators are R&D process new products, products protected by patents, launching new products before competitors and, the profit new products bring to the business.

Sabadka (2012) identified 10 indicators related to innovation:

**Research and development**: The existence of R&D centre, R&D staff, R&D costs, product development cycle, implementation of R&D results in practice.

**New products**: Introduction of new and innovative products, the economy of product innovation, quality and reliability level, technological level of a new product, innovations of production processes, marketing dimension, innovative products.

**Technological flexibility and advanced technology**: Current production technology level, equipment manufacturing, application of new technologies in the industry, technology investments, flexibility factor.

**Organization and human resources**: The level of organization and business management, implementation and management of innovation projects, increasing the performance and benefits of processes, implementation of innovative policies and strategies with management support, quality of labour and social environment, personnel management area, motivation and employee satisfaction, training.

**Information technologies**: Level of using information technology, computer-aided systems design, the purpose of information technology usage, internet usage, internet communication.

**Financing**: The allocation of resources for innovation, financing of innovation projects, availability of resources for investment in the required resource.

**Transfer of innovation**: This include research and development organization or the level of cooperation with the university, transfer issues, application of transfer to work, use of transfer services.

**Partnerships and cooperation**: Commercial cooperation, participation in innovation networks, outsourcing.

**Awareness of innovation**: The rate of implementation of the intelligence systems in the institution, increasing the focus on intelligence system, and determining the innovativeness, the existence of new opportunities.

**Innovative techniques**: This includes the application of innovative techniques and tools, the level of use of selected innovative techniques, the use of project management techniques, design and product development techniques, methodological tools and developments for the preparation of innovation techniques.
Gebauer (2011) defined factors affecting innovation as cooperation with other companies, connections with research institutions and universities, the proportion of university graduates working in the company, implementing important or new changes in corporate strategies, implementing new, advanced management strategies, significant changes in the company's market concept or strategies, summarized as significant aesthetic changes in appearance or design.

**HYPOTHESIS**

This study investigated the relationship between innovation performance, financial performance and operational performance. The research model is shown in Figure 1.

According to Tarrigan (2018), operational performance is an achievement by a business organization remarked by the outcome of the operation and the innovation affects the operational performance. Innovation is considered essential for safeguarding the operational performance (Conde et al., 2018). Zimmermann et al., (2020) found that innovation capabilities positively impact on business performance. Previous studies found that innovation has a significant effect on the company’s operational performance (Abdallaha, 2015; Aliasghar et al., 2019; Un and Asakawa, 2015). Accordingly, we hypothesize that:

**H1:** The innovation performance of companies positively affects their operational performance.

The impact of innovative activity on firm performance and financial performance has received much attention over the last 10 years.

Previous studies analyzed the relationship between innovation and performance. Oliveira et al., 2018; Santos et al., 2018; Frank et al., 2016; Santos et al. 2014, Dahman and Rodriguez, 2014). Oliveira et al. (2018) found the positive relationship among innovation efforts and the financial performance. On the other hand Santos et al. (2014) did not find any significant relationship between innovation and financial performance. Prior studies examined relationship between innovation and financial performance (Chesbrough, 2003, Mir et al., 2016; Xia and Wang, 2021; Cheah et al., 2021; Yusof et al., 2021). Therefore, we expect that:

**H2:** The innovation performance of companies affects financial performance positively.

When the sectors of the companies in our study are examined, it is seen that 34.8% operate in the software sector. Numerous innovations are made in the software industry. The software industry has the largest proportion among the sectors that have participated in our study. Software is defined instructions and data structures (computer programs) that when executed on a machine provide the desired function and performance along with documents that describe the activity and the utilization of programs (Baragde and Baporikar, 2016). Earlier studies have shown that innovation is an important factor in the software industry (Dai et al., 2011; Edison et al., 2013, Giannopoulosa, 2015; Baragde and Baporikar, 2016; Bhatti et al., 2021). Innovation management plays a positive role in supporting a software company's goals (Giannopouloasa, 2015).

It was examined whether there was a difference between the software industry and other sectors in terms of innovation performance. The H3 hypothesis regarding the innovation performance of the sectors has been established:

**H3:** There is a difference between the software industry and other sectors in terms of innovation performance.

50% of the companies participating in our research make continuous improvements in customer relations to increase customer satisfaction. In the 4th hypothesis, it is tested whether there is a difference in innovation performance between companies that make improvements in customer relations and those that do not. Previous studies have shown that customers play an important role in the innovation performance of companies (Ryzhkova, 2015; Edvardsson et al., 2010; Thomke and von Hippel, 2002; Gruner and Homburg, 2000). Accordingly, we hypothesize that:

**H4:** There is a difference in innovation performance between companies that make continuous improvements in customer relations to increase customer satisfaction and companies that do not.

**MATERIALS AND METHODS**

**Survey instrument**

A survey instrument was developed to investigate the relationships between innovation, operational and financial performance. The main constructs are measured through five-point Likert type scales. This scale includes: strongly disagree, disagree, neither disagree or agree, agree, strongly agree. A five - point scale is quite simple for the interviewer to read out the complete list of scale descriptors (Dawes, 2008). Five-point scales appear to be less confusing and to increase response rate (Taherdoost, 2019). Hence five-point Likert type scale was chosen instead of seven-point Likert type scale in our study.

**Sample and data collection**

We selected 349 R&D firms in Turkey. These firms have
been successful from their innovations. We found firms’ list from Teknopark Istanbul’s R&D firm list. An invitation letter was sent to each firm. A total of 111 companies agreed to participate in our survey, representing an effective response rate of 31%, which was highly satisfactory, given the respondents’ confidentiality and seniority. We administered our survey questionnaire based on an interview with a single respondent identified by each company. While several researchers have been opposed to using single respondents because of their inherent restrictions and recommended using multiple respondents (Montabon et al., 2018), our key informants’ innovation performance are well aligned with the constructs of our research model. All the respondents also have some serious decision-making authority, building the case for choosing a single key respondent (Montabon et al., 2018).

The main characteristics of the sample are summarized in Table 1. The sample consists of firms from four variety of industries, including software (43.2%); electronics (29.8%); health (13.5%); Metals industry, machinery, and equipment (13.5%). All of the firms (100%) have been operating for less than 10 years. All the sample comprises small and medium-sized enterprises (SMEs) (100%). All of the sample comprises indigenous firms (100%). The main characteristics of the sample are summarized in Table 1.

Measurement of variables

All the items were measured through five-point Likert-type scale, items ranging from 1 (strongly disagree) to 5 (strongly agree). The brief descriptions of the measures used in this study are provided in the ensuing subsections.

Dependent variable

Operational performance (OP): For operational performance, the instrument developed by Arda et al. (2018). OP includes the following 7 items: (1) Increasing competitiveness in the industry; (2) increasing the general performance of our supply chain; (3) decreasing employee turnover; (4) increasing new product/service development competencies in general; (5) accelerating new product/service development processes; (6) increasing new product/service development competencies by benefiting from R&D investments; (7) new products/increasing consideration of changing customer needs in service development processes.

Financial performance (FP): The items that measure financial performance are drawn from previous research (Arda et al., 2018). FP includes the following items: (1) increase in net profit; (2) increase in sales; (3) increase in market share; (4) increase in operating profit; (5) improvement in cash flow from operations.

Independent variable

Innovation performance (IP): The items that measure the level of IP adopted are drawn from earlier studies (Laforet, 2013; Fang et al., 2011; García-Morales et al., 2007). It includes the following four items: (1) number of patents; (2) the number of new or significantly improved goods and services you commercialized; (3) number of new or significantly improved changes, processes and applications in internal operations (marketing, production, delivery, etc.), (4) number of new or significantly improved business strategies and methods implemented.

RESULTS AND DISCUSSION

The data analysis was conducted in three stages. First, the study’s constructs’ reliability and validity were tested using a confirmatory factor analysis (CFA). Second, the mean of constructs and the correlations between IP, OP and FP were
Table 1: Characteristics of sample firms.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry sector</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software</td>
<td>48</td>
<td>43.2</td>
</tr>
<tr>
<td>Electronics</td>
<td>33</td>
<td>29.8</td>
</tr>
<tr>
<td>Health</td>
<td>15</td>
<td>13.5</td>
</tr>
<tr>
<td>Metals industry, machinery, and equipment</td>
<td>15</td>
<td>13.5</td>
</tr>
<tr>
<td><strong>Firm size (number of employees)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMEs (less than 250)</td>
<td>111</td>
<td>100</td>
</tr>
<tr>
<td><strong>Firm age (years of operation)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young firms (less than 10 years)</td>
<td>111</td>
<td>100</td>
</tr>
<tr>
<td><strong>Type of ownership</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locally-owned</td>
<td>111</td>
<td>100</td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>111</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Confirmatory factor analysis.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>Item Number</th>
<th>Cronbach Alfa (CA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Performance</td>
<td>4</td>
<td>0.760</td>
</tr>
<tr>
<td>Operational Performance</td>
<td>4</td>
<td>0.870</td>
</tr>
<tr>
<td>Financial Performance</td>
<td>5</td>
<td>0.974</td>
</tr>
</tbody>
</table>

analyzed. Finally, the relationships among the study's constructs, as hypothesized, were examined through regression analysis. An SPSS program was used to analyze the data.

Reliability and validity of constructs

The Cronbach Alpha coefficient was examined to determine the reliability of the variables in the study. Table 2 provides Cronbach’s alpha (CA) values to measure the constructs’ internal consistency. CA values exceed 0.70, indicating satisfactory construct reliability levels (Bagozzi and Yi, 1988).

Findings about IP, OP and FP factors of the companies

As shown in Table 3, the mean of firms’ innovation performance was 3.44, mean of operational performance was 3.12, and mean of financial performance was 4.06.

Correlation analysis

Correlation analysis was performed with the obtained data and the relationship between variables was investigated. The findings obtained are shown in Table 4.

Table 4 shows that the highest correlation is between operational performance and financial performance (0.568). Innovation performance has the highest correlation with financial performance (0.557).

Hypotheses testing

Regression analysis was conducted to test the study’s hypotheses by using SPSS. When innovation performance is considered as the independent variable, operation performance and financial performance as the dependent variable and regression analysis is performed, results obtained are shown in Table 5 and Table 6.

As seen in Table 5, the p-value is 0.000, it can be said that the model is meaningful as a whole. Findings regarding the coefficients of the model are given in Table 5. H3 and H4 are accepted at the significance level of 0.05. The standardized parameter estimates seen in Table 5 show the order of importance of the independent variables. When dependent variable is IP and independent variable is FP, it results in the regression equation:

\[
OP = 1.969 + 0.530 \text{IP}
\]

If innovation performance increases by 1 unit, operational performance increases by 0.530 times. This value (0.530) is nearly 0.5. So we can say the increase in innovation performance increases the operational performance halfly.

When dependent variable is IP and independent variable is FP, it results to the regression equation:

\[
FP = 0.038 + 0.896 \text{IP}
\]

If innovation performance increases by 1 unit, financial performance increases by 0.896 times. This value (0.896) is nearly 1. So we can say the increase in innovation performance increases the financial performance equally.
Table 3: Avarage of IP, OP, FP.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Avarage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Performance</td>
<td>3.44</td>
</tr>
<tr>
<td>Operation Performance</td>
<td>3.12</td>
</tr>
<tr>
<td>Financial Performance</td>
<td>4.06</td>
</tr>
</tbody>
</table>

Table 4: Correlations between IP, OP and FP factors.

<table>
<thead>
<tr>
<th></th>
<th>Innovation Performance</th>
<th>Operational Performance</th>
<th>Financial Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>1</td>
<td>0.537**</td>
<td>0.557**</td>
</tr>
<tr>
<td>N</td>
<td>111</td>
<td>111</td>
<td>111</td>
</tr>
<tr>
<td>Operational Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.537**</td>
<td>1</td>
<td>0.568**</td>
</tr>
<tr>
<td>N</td>
<td>111</td>
<td>111</td>
<td>111</td>
</tr>
<tr>
<td>Financial Performance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td>0.557**</td>
<td>0.568**</td>
<td>1</td>
</tr>
<tr>
<td>N</td>
<td>111</td>
<td>111</td>
<td>111</td>
</tr>
</tbody>
</table>

** Correlations are significant at p<0.01.

Table 5: ANOVA for Regression of financial performance.

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1- Financial Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regresyon</td>
<td>76.911</td>
<td>1</td>
<td>76.911</td>
<td>48.989</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>171.126</td>
<td>109</td>
<td>1.570</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>248.037</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2- Operational Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regresyon</td>
<td>26.925</td>
<td>1</td>
<td>26.925</td>
<td>44.243</td>
<td>0.000</td>
</tr>
<tr>
<td>Residual</td>
<td>66.333</td>
<td>109</td>
<td>0.609</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>93.258</td>
<td>110</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Regression analysis coefficients Table.

<table>
<thead>
<tr>
<th></th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
</tr>
<tr>
<td>1- Financial Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.038</td>
<td>0.456</td>
</tr>
<tr>
<td>Innovation Performance</td>
<td>0.896</td>
<td>0.128</td>
</tr>
<tr>
<td>2- Operational Performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.969</td>
<td>0.284</td>
</tr>
<tr>
<td>Innovation Performance</td>
<td>0.530</td>
<td>0.080</td>
</tr>
</tbody>
</table>
According to the findings, innovation performance affects the financial performance two times more than operational performance.

H3 and H4 hypothesis were analyzed by independent groups t test. As shown in Table 7, the Sig. 2 value was found at significance level. So H3 and H4 are accepted. One of our findings is the difference between the software industry and other sectors in terms of innovation performance. Another research result is that there is a difference in innovation performance between companies that make continuous improvements in customer relations to increase customer satisfaction and companies that do not.

**Table 7: T-test for H3 and H4.**

<table>
<thead>
<tr>
<th>H</th>
<th>FACTOR</th>
<th>F</th>
<th>Sig.</th>
<th>t</th>
<th>Sig. 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>H3</td>
<td>Innovation Performance</td>
<td>1.800</td>
<td>0.183</td>
<td>-2.360</td>
<td>0.020*</td>
</tr>
<tr>
<td></td>
<td>Equal variance assumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unequal variance assumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H4</td>
<td>Innovation Performance</td>
<td>1.070</td>
<td>0.303</td>
<td>2.300</td>
<td>0.023*</td>
</tr>
<tr>
<td></td>
<td>Equal variance assumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unequal variance assumption</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*p<0.5.

**CONCLUSIONS, IMPLICATIONS, AND LIMITATIONS**

Innovation, adds value to knowledge. As a result it makes social benefit effective in terms of both economic and sustainability. Innovation plays a key role in the companies' adaptation to the current competitive conditions, increasing the market share by meeting the demands and opinions of the customers and increasing their revenues as a result of these processes and becoming the market leader. Today, most of the companies that take risks and realize innovations that differentiate and create value are market leaders. R&D investments, which are the main inputs of innovation activities, are affected by various characteristics such as the size, age, management and organizational structure of the company, and the sector in which it operates. According to past studies, innovation directly affects company performance. Being innovative as measured by the number of new products or new services, increases the sales of the company and affects the management systems and employee productivity. On the other hand, if companies cannot be innovative, they will not find a place for themselves in today's globally competitive environment. It is an important issue that the outputs of the investments made by companies in innovation can be measured and transformed into commercial success obtained as a result of marketable products and services. There are various criteria to measure innovation performance: The number of patents, the number of new or significantly improved goods and services that you have commercialized, the number of new or significantly improved changes in internal operations (marketing, manufacturing, delivery, etc.), the number of processes and applications implemented, the number of new or significantly improved business strategies and methods.

Our findings offer several practical and academic implications. First, the study findings revealed that innovation performance has a positive effect on financial performance and operational performance in Turkish firms operating in different sectors is positively. Secondly, findings show that innovation performance has a greater impact on financial performance than operational performance. We found that innovation performance affects the financial performance two times more than operational performance. This study also compared the software industry and other sectors in terms of innovation performance. Among the companies participating in our research, it was found that the innovation performance of those operating in the software industry was higher. It is seen that companies that make continuous improvements in customer relations to increase customer satisfaction have higher innovation performance than companies that do not. How can we increase operational performance and financial performance in a company at the same time? This study also answered this question. If a firm improves its innovation performance, it can increase both operational performance and financial performance.

The study was carried out on companies that already have R&D infrastructure or use the R&D infrastructure of a technopark and carry out at least one R&D project. Future research needs to analyze the innovation performance at the level of these companies by applying this study to SME-level companies that have not yet established an R&D infrastructure and have not increased their R&D capability as a basic innovation input. In future studies, a more comprehensive model can be established by adding the technology management variable to the R&D and innovation performance variables. Besides, a study covering more companies can be done by increasing the number of samples. Our study has several limitation. Firstly, the empirical sample is based only on Turkish firms, which makes the findings' generalizability rather limited. Also, our sample includes firms operating in four industries and sectors. In the future studies researchers can investigate more industries and sectors. 

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