

The Effect of Artificial Intelligence on Human Resources Employees¹

(Research Article)

Yapay Zekanın İnsan Kaynakları Çalışanları Üzerindeki Etkisi
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Emine KAMBUR

Dr. Öğr. Üyesi, İstanbul Aydın Üniversitesi, İşletme (İngilizce) Bölümü,
eminekambur@aydin.edu.tr
Orcid No: 0000-0003-4946-6867

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ABSTRACT

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This research aims to reveal the effect of entrepreneurial tendencies of human resources employees on their individual performances and the mediating role of perception of towards change that AI can create. This research has been carried out with human resources employees of Turkey's largest second 500 companies in terms of capital. According to the results of the research, the entrepreneurial tendency of human resources employees significantly and positively affects their perception of towards change that AI can create; perception of towards change that AI can create of human resources employees significantly and positively affects their individual performance; the entrepreneurial tendency of human resources employees doesn't affect their individual performance.

1. INTRODUCTION

Human resources should be entrepreneur-oriented due to rapidly developing technological infrastructures and innovations in global competition conditions. The initiative brings innovation. Innovation is the way human resources provide a source of information to improve their performance. AI is the most recent innovation movement for human resources. With the effect of AI, processes in human resources are renewed. With the rapid introduction of AI into the business and social lives of human resources employees, its effects are felt more intensely in departments. In this respect, perceptions of change that AI can create of human resources employees become important in human resources policies and practices. Due to increasing competition conditions, the human resources of companies of all sizes have become innovative and entrepreneurial. Technologies that are new to human resources such as (AI) should be supported with innovative ideas. Thus, an opportunity can be offered to human resources employees to gain a competitive advantage. From this point of view, perceptions of human resources employees towards AI and their entrepreneurial tendencies can be a good determinant

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of the efficiency and effectiveness of the department. This decisiveness also has an important value on the individual performance levels of employees.

For the human resources department of all large and small-scale companies, the value of elements such as information, people, money, technology, and innovation is gradually increasing. At this point, the economic levels of large and small-scale companies also emerge as a global situation. Therefore, the importance of entrepreneurial tendency is evaluated more intensively (Sen and Aslan, 2017). By reducing hierarchy in human resources, flexible structures that support innovation are emerging. Innovation-oriented and integrated systems are designed. In this context, human resources employees should be innovative, take risks, and have a leader spirit (Bozkurt, 2019). Trasanidis et al., (2020) emphasized that entrepreneurial and innovative orientation leads to economic growth. AI and entrepreneurial tendency are valuable components that companies need for sustainable growth. In addition, when technological innovations such as AI, which are developing rapidly under competitive conditions, are not applied to enterprises, some problems can occur in achieving success. To increase the performance of human resources, which is one of the most important departments of enterprises, it is necessary to support artificial intelligence and be entrepreneur-oriented. Today, human resources produce labor and technology-intensive services. Since human resources constantly need information development and innovation, AI and entrepreneurship must be handled together. Human resources should support AI and enterprise movements to use new processes/new techniques and to improve employee performance. There is a gap in the literature at this point. There is no other study on entrepreneurship tendency and individual performance for human resources employees. This study is thought to fill this gap in the literature. The aim of this research is to determine the effect of entrepreneurial tendencies of human resources employees on their individual performances and the mediating role of perception of towards change that AI can create. In the literature, no other research has been found that addresses entrepreneurial tendencies of human resources employees, their perceptions of change that AI can create, and their individual performances together. A proposed model is the first in the literature. It is thought that this model will also fill the existing gap. In addition, with this study, the perceptions of human resources employees towards artificial intelligence have been determined. It is thought that this will contribute to the literature. Analysis has been carried out by applying quantitative research methods. Human resources employees have been provided with recommendations. The research consists of 5 parts. After the introduction, a literature review on entrepreneurial tendency, perception of towards change that AI can create in human resources management, individual performance has been conducted and hypotheses have been explained. The methodology has been presented in the third part. In the fourth part, the findings obtained from the analysis have been shared. In the fifth part of the research, these results have been interpreted, and the limitations of the study and suggestions for possible future studies have been presented.

2. THEORETICAL BACKGROUND

2.1. Entrepreneurial Tendency

The entrepreneurial tendency is the desire and effort of employees for the job they want to accomplish in their departments (Yildiz and Zehir, 2019). An entrepreneurial tendency is a form of behavior that emerges intentionally. Whether employees start using new and different practices in human resources departments in the future depends on their present intentions. Because positive changes made in entrepreneurial tendency can increase the entrepreneurial

performance of employees. Ocak et al., (2019) attributed this situation to the changeability of belief, attitude, and intention. Because knowledge gained can change employee's beliefs, differentiate employee's attitudes. Attitude can also affect intention. Thus, behavioral change can occur. Demirel and Özbezek (2015) emphasized that the main source of intra-company growth and development is entrepreneurship. Therefore, Demirel and Özbezek (2015) claimed that innovation and entrepreneurship affect each other positively. According to Ozgul (2018), innovation is a determinant of entrepreneurship. Because innovation is the result of curiosity. Kanbur and Ozger (2016) stated that creative employees support entrepreneurship and that these employees perform better. Moreover, these employees more easily accept the use of AI in organizations.

Human resources employees should tend to be entrepreneurs. Sometimes employees can't take action to initiate any innovation in their departments, even though employees have this trend. According to Krapfl and Kruja (2015), entrepreneurship is a culture of change. Regarding this issue, Linan and Fayolle (2015) emphasized that entrepreneurial tendency starts in the mind of the employee. In addition, Linan and Fayolle (2015) stated that these employees have some characteristics such as adding new value to human resources, developing the concept of human resources, and bringing innovations to the department. These employees with entrepreneurial tendencies don't start a new application in human resources randomly. The first employee needs it. According to Yousaf et al. (2015), the entrepreneurial tendency of employees in the entrepreneurship process is an important determinant. Fayolle et al. (2014) underlined that to adopt a new application in human resources; employees should have entrepreneurial tendencies and demand this innovation in their departments. Kaya et al., (2020) found that entrepreneurial tendency in schools increased the use of information technologies.

AI, a new application for human resources, is exciting and its use is increasing day by day. Because AI can transform basic tasks of human resources such as recruitment, training, and performance assessment. In addition to removing the unnecessary burden of human resources employees, AI can facilitate all core tasks. Thanks to AI, the need for muscle power can be eliminated, and qualified manpower equipped with technology integration can come together. However, the use of AI in human resources departments may be related to the entrepreneurial tendencies of employees of that department. Employees with entrepreneurial tendencies can encourage the use of AI. Because employees with entrepreneurial tendencies have features such as analytical intelligence, persuasion, and quick decision-making (Saatci, 2017). Gilbert (2019) stated that there may be a significant change in the performance of employees as a result of supporting the entrepreneurship trend with technology. These employees, who act with continuous development and agility in the human resources department, can use AI to make the business more successful. In this context, it has been thought that entrepreneurial tendencies of human resources employees can affect their perception towards AI and the following hypothesis has been put forward;

H_1 :The entrepreneurial tendency of human resources employees affects their perception of the change that AI can create.

2.2. Perception of towards Change That AI Can Create in Human Resources Management

Generally, when AI is mentioned human-like robots that try to take over the world come to mind. But this technology isn't developed to replace humans. AI is invented to improve human

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abilities. Thus, AI, which is a valuable technological tool, is defined as systems that think like a human, act like a human, think rationally, and act rationally (Nabiyev, 2012). This technology has started to show itself in the human resources department of companies today. Pressure on human resources for strategic decisions has been effective in the increase in usage. Rapid changes and innovations experienced in the department enable decisions to be taken quickly.

At this point, AI can help human resources employees to interact with a different system (Kambur, 2020: 50). Today, AI technologies can undertake automation and routine tasks in the human resources department. It can replace simple tasks that employees do not need to do. Furmankiewicz et al. (2014) stated that in the future, AI can be used in more complex and time-consuming tasks. Brynjolfsson and McAfee (2011) emphasized that new skills may arise with the use of AI and this new situation may affect the perception of employees. As a result of the research conducted by Zhang and Dafoe (2019), it has been determined that approximately 3000 employees in the United States do not experience any worries due to the increase in AI and the anxiety that has been previously felt has decreased significantly. Kambur (2020) underlined that human resources employees of Turkey's largest 500 companies in terms of capital don't perceive AI as a threat, don't accept AI as a leader, and acknowledge AI as a colleague. Alamanova (2018) also stated that employees feel quite complicated with the inclusion of AI in human resources.

The application of AI in the human resources department and its acceptance by the employees can provide operational efficiency and accelerate the increase in productivity. The human resources department's adoption of AI depends on having a good vision and managing it. Change is inevitable for human resources. Human resources employees are expected to quickly accept innovation and change and reflect this on their performance (Buick et al., 2015). Because Karakaya et al., (2018) found that competition and innovation improve performance. Innovation has a competitive advantage. Erdil et al., (2018) underlined that innovation significantly affects job performance, individual performance, and export performance. Paksoy and Ersoy (2016) have researched tourism enterprises; it has been revealed that innovation increases job performance as a result of the study. Similarly, according to Mert (2020), HRM managers should be innovative-oriented, that is, technological change should be allowed in the department. Thus, employees' performance will be more effective and efficient. Employees who are at peace with technology, innovative, open to change, and have the desire to learn continuously can adopt AI and reflect this situation on their individual performances. Because an innovation that occurs depending on the opinions of employees can be successful (Paschen et al., 2020). Therefore, it has been thought that there will be an increase in individual performance of human resources employees who have a positive perception of AI and the following hypothesis has been established;

H_2 : Perceptions of human resources employees of towards change that AI can create affect their individual performance.

2.3. Individual Performance

According to Meslec et al., (2020), performance is the success of employees over their efforts to realize their jobs. Employee's performance in terms of human resources depends on their talent, beliefs, and values. In fact, it can be said that individual performance is open to change. Individual performance is defined as all competencies used by the employee to achieve the

department's goals and objectives (Bute, 2011). There are three important components of individual performance as focus, competence, and commitment. High individual performance can come with these three components (Meslec et al., 2020). The focus component is the first step in increasing individual performance. Because success in business life has nothing to do with luck. Success is achieved through focus and good performance (Petersen and Penner, 2020). The competence component can lead human resources employees to perform better in their departments. Talent can come by birth; however, competence can develop with skill. The commitment component also ensures the continuity of human resources employees' relationships with their departments. Thanks to this component, a sense of responsibility can be felt intensely (Janardhanan et al., 2020).

For human resources to make a difference in the increasingly competitive environment with globalization, there is a need for employees with good performance and entrepreneurial tendencies. Because in an environment where knowledge is rapidly increasing; it is expected from human resources to improve their quality. This is possible with employees with high entrepreneurial tendencies and high individual performance. Denisi (2011) underlined that performance is affected by many factors such as innovation and change. Ogbanufe and Gerhart (2020) claimed that the entrepreneurial tendencies of employees increase their individual performances. Moon et al., (2017) claimed that innovation and objectivity in the workplace increased performance. Boz et al. (2020) also emphasized that entrepreneurial tendency increases the work performance of their employees. Nahid et al. (2017) found that entrepreneurship tendency has an important contribution to organizational performance. Cagla and Ozen (2019) stated that the entrepreneurial tendencies of companies affect performance. Papatya et al., (2016) claimed that entrepreneurial companies increase internal entrepreneurship in employees and this internal entrepreneurship has a positive relationship with job performance. Akdogan and Cingoz (2015) emphasized that enterprises should increase their entrepreneurial performance to be successful. Yesil et al., (2016) also underlined that entrepreneurship depends on the organizational culture and the structure of the organization. Organizations should support entrepreneurship to have better employee performance. Human resources employees with high entrepreneurial tendencies can use opportunities and resources effectively to bring some new plans to the department, work hard for it, and have the potential to take risks against adversity. These employees are of great importance in achieving the goals and objectives of human resources. In this context, it has been thought that entrepreneurial tendencies of human resources employees can have an effect on their individual performances and the following hypothesis has been created;

H_3 :The entrepreneurial tendency of human resources employees affects their individual performance.

2.4. The Mediating Role of Perception of towards Change That AI Can Create

There is a rapid transformation in today's human resources department. Human resources processes are updated with the effect of technological developments and digitalization. AI, which is considered a major development of digital technology, has begun to be heavily included in human resources (Irge and Sen, 2020). Therefore, perceptions of human resources employees towards AI can become important in human resources policies and practices. Increasing competition conditions also find out innovation and entrepreneurship as a working area for human resources. Supporting new technologies such as AI with innovative ideas and

entrepreneurship can offer human resources an important chance to gain a competitive advantage. When evaluated from this point of view, approaches of human resources related to AI and entrepreneurial tendency can have a significant effect on efficiency and effectiveness. This effect has a significant value on individual performance of employees. Because perceptions of employees of towards change that AI can create affect their entrepreneurial tendencies and individual performances. It is predicted that as the perception of AI becomes important in human resources, entrepreneurial tendency and individual performance of employees will increase. Kalmuk and Acar (2018) stated that entrepreneurship has a mediating effect on the relationship between innovation and performance. Similarly, Okay and Tekin (2020) underlined that entrepreneurship and innovation have a positive effect on the performance of organizations. Based on these explanations, the following hypothesis has been put forward;

H_4 : A perception of change that AI can create of human resources employees mediates the relationship between entrepreneurial tendency and individual performance.

3. METHOD

The research model that reveals the relationship between the relevant variables in this study, which has been conducted to determine the effect of entrepreneurial tendencies of human resources employees on their individual performances and the mediating role of perception towards change that AI can create, is shown in Figure 1. The model shown in Figure 1 has been tested with Process Macro. Accordingly, the entrepreneurial tendency (independent variable) is a predictor variable, individual performance variable (dependent variable) is an outcome variable, perception variable of towards change that AI can create is a mediating variable. The mediating variable tries to explain the effect of the independent variable on the dependent variable. That is, the mediating variable provides an understanding of how the relationship between two variables occurs. In the model in Figure 1, a change in the predictor variable may cause a change in the mediating variable. Change in the mediating variable can also lead to change in the dependent variable (Gurbuz, 2019: 47).

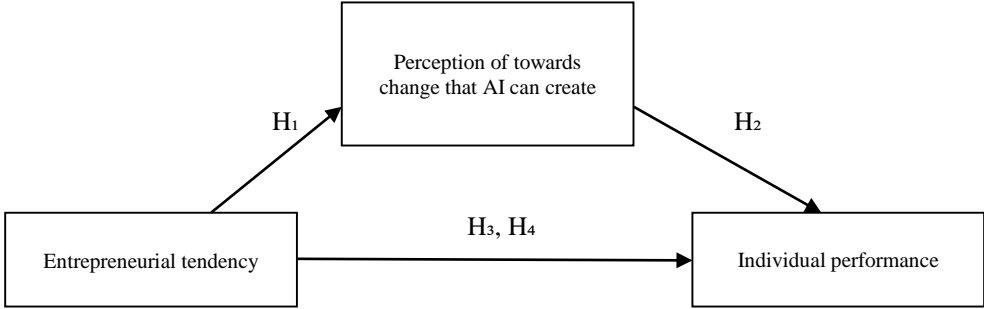


Figure 1. Research Model

3.1. Data Collection

The data set used in the research, according to Istanbul Chamber of Industry data, has been obtained from human resources employees of Turkey's largest second 500 companies in terms of capital through questionnaires. Questionnaires have been delivered to human resources

employees of Turkey's largest second 500 companies in terms of capital between October 20, and December 9, 2020. Data has been collected digitally from 441 employees (n=441)

3.2. Measures

In the research, as a data collection tool, a questionnaire form consisting of demographic questions and all constructs have been measured on five-point Likert scales ranging from Definitely Agree to Definitely Disagree. In the first part of the questionnaire form, there are four questions about entrepreneurial tendency (Girginer and Uckun, 2004), thirty questions about the perception of toward change that AI can create (Kambur, 2020) in the second part, and three questions about individual performance (Nyhan and Marlowe, 1997) in the third part. In the last part, there are five statements regarding demographic characteristics. There are also five questions regarding demographic characteristics. Table 1 summarizes the scales used in this research.

4. RESULTS

4.1. Demographic Information

Of the 441 human resources employees participating in the research, 215 are female and 226 are male. Sixty-nine of the employees are between the ages of 18-28 years old, while 220 are between the ages of 29-39. The remaining 114 employees are between the ages of 40-50 years old, and 38 are over 51 years old. Twenty-three employees have a high school education or below, 36 are associate degrees, 255 are university graduates and 127 employees have postgraduate qualifications. Sixty-eight employees have work experience of between 0-5 years, 114 have work experience of between 6-10 years, 125 have work experience of between 11-15 years, 72 have work experience of between 16-20 years and 62 have work experience of more than 21 years. Two hundred and forty-five employees work in the Marmara Region, 63 work in the Aegean Region, 22 work in the Mediterranean Region, 23 work in the Black Sea Region, 64 work in the Central Anatolia Region, 12 work in the Eastern Anatolia Region, and 12 work in the Southeastern Anatolia Region.

4.2. Data Analysis

Process Macro (version 3.5) written by Hayes (2012) has been used to analyze data. Data have been bootstrapped to 5000 times with replacement. Details of the findings of the results are given below.

Table 1. Reliability, Descriptive Statistics & Cronbach's Alpha

| Scales | Mean (SD) | ET | IP | PAI |
|--|-------------|---------|---------|------|
| Entrepreneurial Tendency (ET) | 3.61 (1.04) | 0.97 | | |
| Individual Performance (IP) | 3.74 (1.09) | 0.750** | 0.98 | |
| Perception of toward change that AI can create (PAI) | 3.63 (1.06) | 0.807** | 0.913** | 0.98 |

Table 2. The Effect of Entrepreneurial Tendency on Perception towards Change That AI Can Create

| Model Summary | | | | | | |
|--------------------------|-------|-------|----------|-------|---------|-------|
| R | R-sq | MSE | F | df1 | df2 | p |
| 0.807 | 0.652 | 0.393 | 821.6702 | 1.000 | 439.000 | 0.000 |
| Model | | | | | | |
| | coeff | SE | t | p | LLCI | ULCI |
| constant | 0.672 | 0.107 | 6.24 | 0.000 | 0.466 | 0.883 |
| entrepreneurial | 0.820 | 0.286 | 28.66 | 0.000 | 0.764 | 0.876 |
| Standardized coefficient | | | | | | |
| | coeff | | | | | |
| entrepreneurial | 0.807 | | | | | |

The results of the analysis made to determine whether entrepreneurial tendencies of human resources employees affect their perception of change that AI can create are shown in Table 2. In Table 2, it is seen that entrepreneurial tendencies of human resources employees significantly and positively affect perceptions of towards change that AI can create. ($\beta=0.820$, %95 CI [0.764; 0.876], $t=28.66$, $p=0.000$). Based on these results, it can be said that H_1 is supported. In addition, the entrepreneurial tendency of human resources employees explains approximately 65% ($R^2=0.652$) perception of change that AI can create.

Table 3. The Effects of Entrepreneurial Tendency on Perception of towards Change that AI can create and Individual Performance

| Model Summary | | | | | | |
|--------------------------|-------|-------|-----------|-------|---------|-------|
| R | R-sq | MSE | F | df1 | df2 | p |
| 0.913 | 0.834 | 0.198 | 1105.4617 | 2.000 | 438.000 | 0.000 |
| Model | | | | | | |
| | coeff | SE | t | P | LLCI | ULCI |
| constant | 0.298 | 0.079 | 3.74 | 0.002 | 0.141 | 0.455 |
| entrepreneurial | 0.037 | 0.034 | 1.08 | 0.280 | -0.030 | 0.105 |
| AI | 0.911 | 0.033 | 26.86 | 0.000 | 0.844 | 0.977 |
| Standardized coefficient | | | | | | |
| | coeff | | | | | |
| entrepreneurial | 0.035 | | | | | |
| AI | 0.884 | | | | | |

Table 3 shows the effects of perception of towards the change that AI can create, which is a mediating variable, and entrepreneurial tendency on individual performance. Accordingly, it is seen that perception of towards change that AI can create has a significant and positive effect on individual performance ($\beta=0.911$, %95 CI [0.844;0.977], $t=28.86$, $p=0.000$). Based on these results, H_2 is supported. It is seen that entrepreneurial tendency doesn't have a significant effect on individual performance ($\beta=0.037$, %95 CI [-0.030; 0.105], $t=1.08$, $p=0.280$). Hence, it can be said that H_3 isn't supported. Additionally, perception of towards change that AI can create an entrepreneurial tendency explains 83% ($R^2=0.834$) of change in individual performance.

Table 4. The Total Effect of Entrepreneurial Tendency on Individual Performance

| Model Summary | | | | | | |
|--------------------------|-------|-------|---------|-------|---------|-------|
| R | R-sq | MSE | F | df1 | df2 | p |
| 0.749 | 0.562 | 0.525 | 563.632 | 1.000 | 439.000 | 0.000 |
| Model | | | | | | |
| | coeff | SE | T | p | LLCI | ULCI |
| constant | 0.911 | 0.124 | 7.329 | 0.000 | 0.666 | 1.155 |
| entrepreneurial | 0.784 | 0.033 | 23.740 | 0.000 | 0.719 | 0.849 |
| Standardized coefficient | | | | | | |
| | coeff | | | | | |
| entrepreneurial | 0.749 | | | | | |

Table 4 shows the effect of entrepreneurial tendency on individual performance, in a model without the mediating variable. That is, the total effect is seen. Accordingly, it is understood that in a situation without perception of towards change that AI can create, the entrepreneurial tendency has a significant positive effect on individual performance ($\beta=0.784$, %95 CI [0.719;0.849], $t=23.740$, $p=0.000$).

Table 5. The Total, Direct and Indirect Effects of Entrepreneurial Tendency on Individual Performance

| Model Summary | | | | | | |
|--|--------|--------|-------|--------|-------|--|
| Effect | SE | t | P | LLCI | ULCI | |
| 0.784 | 0.033 | 23.740 | 0.000 | 0.719 | 0.849 | |
| Direct effect of entrepreneurial tendency on the perception of change that AI can create | | | | | | |
| Effect | SE | t | P | LLCI | ULCI | |
| 0.037 | 0.034 | 1.081 | 0.280 | -0.030 | 0.105 | |
| Indirect effect of entrepreneurial tendency on the perception of change that AI can create | | | | | | |
| Effect | BootSE | | LLCI | ULCI | | |
| 0.747 | 0.048 | | 0.650 | 0.844 | | |

Table 5 shows the indirect effect of entrepreneurial tendency on individual performance through the mediating variable. Therefore, it is determined that the indirect effect of entrepreneurial tendency on individual performance is significant. Perception of towards change that AI can create mediates the relationship between entrepreneurial tendency and individual performance ($\beta=0.747$, %95 BCACI [0.650;0.844]). In addition, the fully standardized effect size of the mediation effect is 0.714. Since this value is greater than 0.25, it can be said to be a high effect size. In light of these results, H_4 can be accepted.

5. DISCUSSION AND CONCLUSION

Changes and transformation movements experienced in many areas in today's world reveal a different process in human resources. The successful implementation of change management in the human resources department is becoming more important in terms of working conditions.

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The human resources department should successfully manage the changing environment they are in. In this context, the effect of AI that comes with change on the individual performance of human resources employees emerges. Activation of AI technology in human resources can directly affect perceptions of change that AI can create, entrepreneurial tendency, and individual performance of employees within human resources. This expectation coincides with the result of the study. As a result of the study, it has been determined that AI enables employees to be more entrepreneurial-oriented and increases their individual performance. Because perceptions of change that AI can create of human resources employees are extremely positive. Therefore, AI is not perceived as a threat.

For human resources to adapt well to the competitive environment, entrepreneurial tendency and individual performance emerge as two factors with strategic importance. In this research, it has been determined that the entrepreneurial tendency of human resources employees affects the perception of change that AI can create. When the literature is examined, no other similar studies are found. This research is a pioneer for subsequent research. It has been concluded that perceptions of change that AI can create of human resources employees affect their individual performances. This result is expected to be a pioneer for further research since a similar result can't be reached. Feng and Chen (2020), Erdle (2018) concluded in their research that entrepreneurial tendency affects individual performance. However, in this study, it has been reached that the entrepreneurial tendency of human resources employees doesn't affect their individual performance. Within the scope of the study, it has been found that the perception of change that AI can create mediates the relationship between entrepreneurial tendency and individual performance. Similarly, Irge and Sen (2020) find out that employees' attitudes towards digital technology affect their internal entrepreneurship and individual performances.

The concept of "New Normal", which emerged recently, is defined as the beginning of a brand new era for all individuals and organizations with the differentiation of organizational management compared to the past (Irge and Sen, 2020). With the "New Normality", talented employees leave their jobs and mostly start their own businesses. Therefore, it is recommended that human resources departments increase their entrepreneurial activities by keeping talented employees within human resources. Considering the contribution of the technological and technical infrastructure of human resources to gaining competitive advantage, talents and innovative ideas of employees can have strategic importance. The organizational commitment of employees who support innovation can be high. Employees within human resources should be evaluated in this respect. Innovative employees can create value and difference in the external environment should be recruited to human resources. Human resources should effectively manage changes in both the internal and external environment. Human resources employees are recommended to adapt to environmental conditions, focus on new trends, and follow developments. In addition, it is suggested to design appropriate structures to recognize the effects of all possible future changes and transformations on employees. All activities to be carried out for this purpose should be supported by AI and the entrepreneurship process.

The limitation of this research is that it can be done with a certain number of participants. 441 questionnaires collected from human resources employees of Turkey's largest second 500 companies in terms of capital can be included in the limitations of the research. Conducting the study within a certain time can be considered a limitation.

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