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A Study on the Impact of Agile Leadership and Innovative Behaviors on Psychological Empowerment

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ABSTRACT

In this study, the effects of agile leadership and innovative behaviors on psychological empowerment and its dimensions were examined. "Agile Leadership Scale", "Innovative Behaviors Scale" and "Psychological Empowerment Scale" were used in the questionnaire form used in the research. The data of the research were obtained from 410 employees in the information and communication sector operating throughout Türkiye. Parametric test techniques were used for the analysis of the data, the relationship between the scale scores was examined by Pearson correlation and the effect was examined by regression analysis. Factor analysis was applied to the scales used in the study. As a result of the factor analysis of the agile leadership scale, it was determined that the scale consisted of 4 sub-dimensions, and items 1, 21, and 27 were not included in the analysis due to overlap. As a result of the factor analysis of the innovative behavior scale, it was determined that the scale consisted of one dimension, and the 12th item was not included in the analysis because the factor load was below 0.300. As a result of the factor analysis of the psychological empowerment scale, it was determined that the scale consisted of 3 sub-dimensions. According to the results of the analysis, it has been determined that agile leadership and innovative behaviors have an effect on psychological empowerment and on the sub-dimensions of psychological empowerment. The research generally emphasizes the importance of agile leadership and innovative behavior on employees' perceptions of psychological empowerment. In order to achieve success in leadership, it is necessary to implement approaches that will show that employees and their work are important in order to develop agile features, to follow the developments in technology, communication and information systems to increase innovative behaviors, and to increase psychological empowerment.

Keywords: Agile Leadership, Innovative Behaviors, Psychological Empowerment

Çevik Liderlik ve Yenilikçi Davranışların Psikolojik Güçlenmeye Etkisi Üzerine Bir Araştırma

Süreç

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ÖZ

Bu araştırmada çevik liderlik ve yenilikçi davranışların psikolojik güçlendirmeye ve boyutlarına olan etkisi incelenmiştir. Araştırmada kullanılan anket formunda, "Çevik Liderlik Ölçeği'', "Yenilikçi Davranışlar Ölçeği" ve "Psikolojik güçlendirme Ölçeği" kullanılmıştır. Araştırmanın verileri, Türkiye genelinde faaliyet gösteren bilgi ve iletişim sektöründeki 410 çalışandan elde edilmiştir. Verilerin analizi için parametrik olan test teknikleri kullanılmış, ölçek puanları arasındaki ilişki Pearson korelasyon, etki ise regresyon analizi ile incelenmiştir. Araştırmada kullanılan ölçekler için faktör analizi uygulanmıştır. Çevik liderlik ölçeğinin faktör analizi sonucunda ölçeği 4 alt boyuttan oluştuğu belirlenmiş, binişiklik nedeniyle 1, 21 ve 27. madde analize dahil edilmemiştir. Yenilikçi davranış ölçeğinin faktör analizi sonucunda ölçeğin tek boyuttan oluştuğu belirlenmiş, faktör yükünün 0,300 altı olması nedeniyle 12. madde analize dahil edilmemiştir. Psikolojik güçlendirme ölçeğinin faktör analizi sonucunda ölçeği 3 alt boyuttan oluştuğu belirlenmiştir. Analiz sonuçlarına göre, çevik liderlik ve yenilikçi davranışların psikolojik güçlendirme üzerinde ve psikolojik güçlendirmenin alt boyutları üzerinde etkisinin olduğu tespit edilmiştir. Araştırma genel olarak çalışanların psikolojik güçlendirme algıları üzerinde çevik liderliğin ve yenilikçi davranışın önemini vurgulamaktadır. Liderlikte başarıyı yakalamak için çevik özelliklerin geliştirilmesi, yenilikçi davranışları artırmak için teknoloji, iletişim ve bilişim sistemlerindeki gelişmelerin takip edilmesi ve psikolojik güçlendirmenin arttırılması için çalışanların ve yaptıkları işin önemli olduğunu gösterecek yaklaşımların hayata geçirilmesi gerekmektedir.

Anahtar Kelimeler: Çevik Liderlik, Yenilikçi Davranışlar, Psikolojik Güçlendirme, Çeviklik, Yenilikçilik

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Introduction

Human resources are one of the most important resources that will accelerate businesses when used correctly and appropriately. The ability of businesses to use their human resources effectively and to keep them in the business, as well as finding new human resources, depends on giving importance and value to this resource. The fair and equal treatment of employees in situations such as remuneration, promotion, and rewards will improve their motivation and loyalty to the institution. Regular training to reveal and develop the talents of the employees will increase efficiency and productivity. In addition, employees' openness to innovative behaviors will ensure organizational success. Organizational management, providing opportunities for employees to express their innovative behavior and innovative ideas, and creating new opportunities for employees will strengthen them psychologically.

Psychological empowerment can be expressed as the intrinsic motivation of employees. Employees with high perceptions of psychological empowerment perform their duties and activities effectively and efficiently, motivated. Psychological empowerment is a concept with multiple effects. It affects organizational performance, employee performance, participation, organizational commitment, and the ability to operate freely (Spreitzer, 1995; Thomas & Velthouse, 1990). In this context, it is seen that psychological empowerment is important for organizations. In addition, psychological empowerment significantly affects innovative work behavior (Tekin & Akgemci, 2019).

With the introduction of computers and the Internet into our lives in the 1990s, our working life and personal life have undergone a great transformation. Organizations that adapt quickly to this transformation have gained a great competitive advantage. They had the chance to grow, to open up to international markets, to compete with world brands and to catch up with the era. Organizations that try to adapt to rapidly developing internal and external environmental conditions need agile leaders who have the courage and competence to realize this change. Therefore, agile leadership and innovative behavior are two important factors that contribute to the success of organizations in today's rapidly changing business environment.

In the study, the effects of agile leadership and innovative behaviors on psychological empowerment and its dimensions were examined. “Agile Leadership Scale”, “Innovative Behavior Scale” and “Psychological Empowerment Scale” were used in the questionnaire form used in the research. Factor analysis was applied for the scales. The sample of the study consisted of 410 employees in the information and communication sector throughout Türkiye. The obtained data were analyzed by using the SPSS 21.0 package program, the relationship between the scale scores was analyzed by Pearson correlation and the effect was analyzed by regression analysis. As a result of the analysis of the collected data, the effect of agile leadership and innovative behaviors on psychological empowerment and the sub-dimensions of psychological empowerment were tried to be determined. Then, the results of the analysis were evaluated, and in the conclusion part, the necessity of agile leadership and the importance of adapting to innovative behaviors and suggestions for business life in order to increase psychological empowerment were presented. When the literature was examined, no study was found related to the research subject. In this context, it is thought that the study will make an important contribution to the literature.

Conceptual Framework

Agile Leadership

In today's volatile and highly competitive business environment, organizations need to be agile and innovative to stay ahead of the competition. Leaders must have the ability to navigate change and uncertainty and inspire their teams to be creative and adaptable. It can be said that the concept of agile leadership is a key factor in psychological empowerment, employee motivation, commitment, and performance.

An agile leader is one who can rapidly change the innovation and implementation of ideas and content in complex, uncertain environments and changing conditions (Joiner & Josephs, 2007). This concept emerged from the agile management approach that emerged in the software development industry and has since been adopted by organizations in various sectors (Denning, 2018). An agile leader is a leader who sets guiding principles, develops strategies and has the ability to create mechanisms that will ensure a smooth transition to organizational agility (Attar & Abdul- Kareem, 2020).

Agile leadership includes six basic dimensions: Result-oriented, team-oriented, change-oriented, competent, flexible and fast (Akkaya & Bayram, 2021; Akkaya et al., 2020). The agile leader can quickly implement the necessary directions by focusing on the conclusion of the project he is working on. Being results-oriented is helping a leader to monitor and evaluate activities, follow up projects, programs and policies at hand, and demonstrate their effects, by creating a common understanding among all stakeholders about the organization's goals, values and priorities (Kusek & Rist, 2010). Being team-oriented includes the ability to anticipate and respond to the needs and expectations of all employees and various stakeholders, including customers and shareholders. For this purpose, the agile leader inspires, willingly brings together and motivates his teams (Bass, 2019). It tries to internalize the agile organizational culture by increasing the collective performance. Thus, it enables teams to manage themselves (Pieterse et al., 2019). Being focused on change includes the ability to adapt to innovations. It is a change and transformation-oriented style of acting by developing the ability of companies to compete in uncertain environmental conditions (Hayward, 2018). Being competent includes the ability to come up with new

ideas and solutions to problems and apply them. Agile leader closely follows the technological developments and has competent features in integrating these developments into his own company. Because the degree of digital literacy and technological agility is high (Özdemir & Çetin, 2019). Being flexible means having the foresight to achieve success, constantly redesigning the way we work. It is being flexible to differences between groups and changing situations (Parker et al., 2015, Henson, 2015). Finally, to be fast is to respond to expectations as quickly as possible. This enables businesses to adapt quickly to innovation processes. It prioritizes process improvement, is change-oriented and has the ability to respond quickly (Rigby et al., 2016). Thus, the agile leader can develop the ability to reflect on his own assumptions and biases and adjust his behavior accordingly.

Studies have shown that agile leadership has a positive relationship with organizational performance (Joiner & Josephs, 2007; Liedtka, 2015). Leaders who are agile can navigate change and uncertainty better, identify opportunities for innovation, and inspire their teams to be creative and adaptable.

Innovative Behavior

Organizations operating in rapidly changing economic and technological conditions need to adopt innovative approaches in order to survive and gain a competitive advantage over other competitors. Organizations that are open to innovative ideas, studies, and all kinds of innovative strategies will adapt more easily to new environmental conditions. Organizational structures that give employees the opportunity to develop their creativity and give importance to their thoughts will include innovative behaviors and ideas in their work plans (Köhler et al., 2010; Gebert et al., 2006).

Innovative behavior can be defined as a strategic activity that gives or loses competitive advantage to organizations (Von Hippel, 1988). In another definition, innovative behavior refers to the process of revealing new applications in solving problems (Ardts et al., 2010). In this process, first the problem is defined, various solutions are produced, and then the chosen solution is applied by choosing among the solutions (Carmeli et al., 2006). Thus, it becomes possible to implement new ideas and new solutions.

Innovation is the main driver of organizational success and innovative behavior refers to actions and behaviors that lead to the creation of new ideas, products or processes (Scott & Bruce, 1994). Innovative behavior is not limited to a specific role or function within the organization and can be exhibited by employees at all levels. Innovative behavior consists of seven dimensions: idea generation, idea seeking, idea communication, implementation activities, including others, overcoming obstacles and innovative outputs (Pala & Turan, 2020). Internally motivated employees are more likely to engage in innovative behaviors because they are driven by the desire to learn and grow (Amabile, 1998). Creativity that develops as a result of idea seeking and idea communication is an important factor in innovative behavior as it includes the ability to produce new and original ideas (Shalley & Perry-Smith, 2008). Initiating implementation by involving others is a situation that will strengthen and ensure success in innovative activities. If employees have control over their work, and have the opportunity to try their ideas and take risks, these will positively affect innovative behavior (Baer & Frese, 2003). Thus, it will gain the power to overcome obstacles and innovative outputs will be realized (Pala & Turan, 2020). Employees will be able to develop their innovative behaviors in a positive way by providing social support, feedback and encouragement from other organizational members and leaders.

Studies have shown that innovative behavior is positively associated with several variables, including job satisfaction, creativity, and organizational performance (Scott & Bruce, 1994; West & Sacremento, 2012).

Psychological Empowerment

Conger and Kanungo, in their study in 1988, investigated the strengthening process for the first time and tried to describe this process. Later, Thomas and Velthouse (1990), Spreitzer (1995), Laschinger et al. (2004) and O'Brien (2010) demonstrated the importance of the level of psychological empowerment of employees with their studies on psychological empowerment, making it an important place in the literature. Spreitzer developed a psychological empowerment scale with his study in 1995. Psychological empowerment refers to the degree to which employees perceive that they have control over their work and can affect organizational results (Spreitzer, 1995). This degree of perception depends on the psychological interpretation of the level of empowerment by employees (Laschinger et al., 2004; Thomas & Velthouse, 1990). Psychological empowerment is based on the assumption that employees who feel empowered are more motivated, engaged, and productive than those who do not.

Psychological empowerment was examined in four dimensions (Thomas & Velthouse, 1990; Spreitzer, 1995; Laschinger, et al., 2004; O'Brien, 2010; Uner & Turan, 2010): Meaning, competence, autonomy, and impact. Meaning refers to the degree to which employees find their work meaningful and compatible with their personal values and goals. Competence refers to the degree to which employees feel competent and capable in their jobs. Autonomy, in other words, refers to the degree of self-determination, the degree to which employees feel they have control over their jobs and can make decisions that affect results. Finally, impact refers to the degree to which employees feel that their work has a meaningful impact on the organization and its stakeholders.

Studies have shown that psychological empowerment is positively associated with various variables, including job satisfaction, organizational commitment, and performance (Spreitzer, 1995; Ahearne et al., 2014). Empowered employees are more likely to be motivated and engaged in their work, leading to higher levels of performance and commitment to the organization.

The Relationship Between Agile Leadership, Innovative Behavior and Psychological Empowerment

Agile leadership and innovative behavior are two important factors that contribute to psychological empowerment in employees. Agile leaders are more successful at creating a culture of innovation and compliance within their organizations, which can lead to greater employee engagement and empowerment. Similarly, employees who exhibit innovative behavior are more likely to feel empowered because they can influence results and contribute to the success of the organization. When the literature is examined, it is seen that servant leadership has a positive effect on psychological empowerment and organizational commitment (Nal et al., 2020), there is a significant and positive relationship between paternalistic leadership and psychological empowerment (Turgut and Sağlam Arı, 2021), psychological empowerment significantly affects innovative work behavior. (Tekin & Akgemci, 2019). It is important to what extent agile leadership and innovative behaviors affect the four sub-dimensions of psychological empowerment. Because psychological empowerment is a factor that will directly affect the commitment, motivation and performance of employees. If it can be determined which of the sub-dimensions are affected by agile leadership and innovative behaviors, it will be easier for the organization and managers to empower employees psychologically. In this case, it becomes possible to establish the following hypotheses:

H1: Agile leadership sub-dimensions and innovative behaviors have an effect on the sub-dimensions of psychological empowerment.

H2: Agile leadership sub-dimensions and innovative behaviors have an effect on psychological empowerment.

Studies have shown that there is a positive relationship between agile leadership and innovative behavior (Liedtka, 2015; Akkaya, 2020). Agile leaders are more successful at creating a culture that fosters creativity and innovation among employees, which can lead to increased innovative behavior. Similarly, employees who feel empowered are more likely to engage in innovative behaviors because they are more motivated and engaged in their work.

There is also evidence to suggest that both agile leadership and innovative behavior are positively associated with psychological empowerment. A study by Turan (2021) found that agile leadership is positively related to the performance level of employees. Similarly, Ahearne et al. (2014) found that innovative behavior was positively associated with psychological empowerment and that this relationship was mediated by employees' perceptions of autonomy and influence. Research shows that the leadership performance of managers improves positively (Joiner & Josephs, 2007; Liedtka, 2015). Leaders who are agile can navigate better in conditions of uncertainty and change, seize opportunities for innovation, and inspire their followers to engage in creative and adaptive activities. Therefore, the following hypothesis can be established:

H3: Agile leadership and innovative behaviors have an effect on psychological empowerment.

Methodology

Purpose and importance of the research

The main problem of this research, "Does agile leadership and innovative behaviors affect the psychological empowerment of employees?" has been determined. The study is important because there is no study on agile leadership, innovative behaviors, and psychological capital in the literature. There are many organizational, managerial, or individual factors that affect the psychological empowerment of employees. In the study, it was tried to determine the effect of agile leadership and innovative behaviors on the sub-dimensions of psychological empowerment, meaning, competence, autonomy, and impact. Thus, it was tried to fill the gap in the literature on this subject and to increase the level of psychological empowerment of the employees. This study, which emphasizes that organizations and organizational managers trying to adapt to new and changing environmental conditions every day, should be agile and fast while adapting to innovation, makes a special contribution to the literature.

Research Model

In this study, it is assumed that agile leadership and innovative behaviors have an effect on psychological empowerment. The research model of the effect of agile leadership and innovative behaviors of information and communication sector employees across Türkiye on psychological empowerment is shown in Figure 1 below.

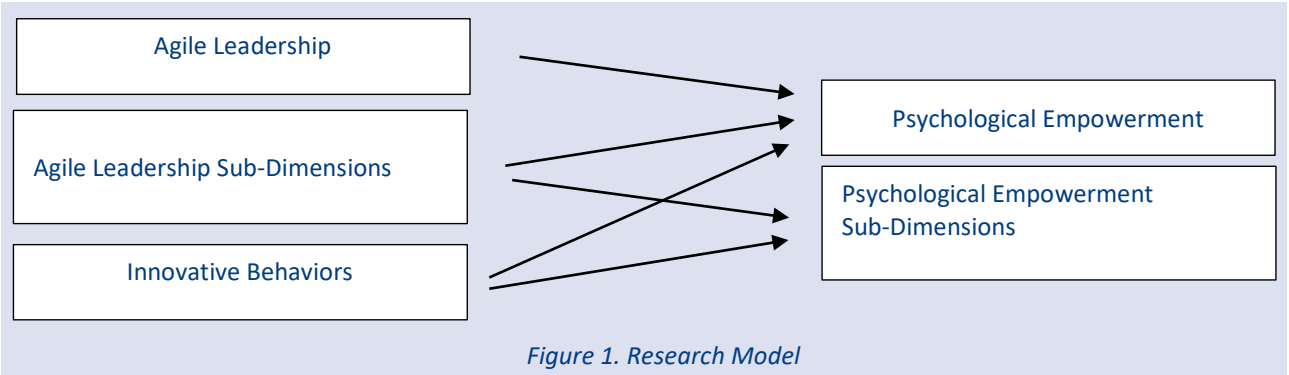

Figure 1. Research Model

Universe and Sample

The population of the research consists of 258 746 people working in the information and communication sector operating throughout Türkiye (TUIK, 2022). In the study, 410 working people were reached between 01.01.2023 and 30.03.2023 using the convenience sampling method. 410 samples are considered sufficient for the study.

Data Collection Tools of the Research

The questionnaire form used in the research consists of 4 parts. Demographic characteristics were used in the first part, "Agile Leadership Scale" in the second part, "Innovative Behaviors Scale" in the third part, and "Psychological Empowerment Scale" in the fourth part. A 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree) was used in the questionnaire. A 5-question form was created, including demographic information, such as gender, age, educational status, status, and seniority in the workplace.In the second part of the questionnaire, Akkaya et al. (2020) "Agile Leadership scale" (32 items) was used. The sub-dimensions of the scale are being result oriented (8 items), being competent (5 items), being flexible (5 items), being team oriented (8 items), being fast (3 items) and being change oriented (3 items). It consists of six sub-dimensions. It was seen that the Cronbach Alpha value of the Agile leadership scale was 0.967, and it was understood that the measurement tool was highly reliable.

In the third part of the questionnaire, the "Innovative Behavior scale" developed by Lukes and Stephan (2017) and adapted by Pala and Turan (2020) was used. The scale consists of seven dimensions: idea generation, idea seeking, idea communication, implementation activities, involving others, overcoming obstacles, and innovative outputs. In the research, four sub-dimensions of the scale were used: idea generation (3 items), idea seeking (3 items), idea communication (4 items) and implementation activities (3 items). The Cronbach Alpha coefficient was found to be 0.935, it was found to be at an acceptable level and it was understood that the scale was reliable.

In the fourth part of the questionnaire, the “Perception of Psychological Empowerment Scale” developed by Spreitzer (1995) and adapted by Uner and Turan (2010) was used to measure psychological empowerment. The scale consists of four dimensions and 12 items: meaning, competence, autonomy (self-determination) and impact. The scale contains three items for each of the four dimensions. The Cronbach Alpha value was found to be 0.84 and it was found to be acceptable and reliable.

Findings

In the study, factor analysis was applied for the scales. Afterwards, the scale scores were calculated and the kurtosis and skewness coefficients were examined to determine the conformity of the scores to the normal distribution. The kurtosis and skewness values obtained from the scales are found to be between +3 and -3 for normal distribution (Groeneveld and Meeden, 1984; Moors, 1986; Hopkins and Weeks, 1990; De Carlo, 1997). Since normality was ensured, parametric test techniques were used, the relationship between the scale scores was analyzed with the Pearson correlation test, and the effect was examined with regression analysis.

Validity and Reliability Analysis

Reliability Analysis

Cronbach's alpha coefficient gives the reliability level of the scale. The coefficient ranges from 0 to 1. Depending on the alpha (α) coefficient, the reliability of the scale is interpreted as follows (Nunnally, 1967: 248).

- If .00 ≤ α < ,40 the scale is not reliable,
- If .40 ≤ α < ,60 the reliability of the scale is low,
- If .60 ≤ α < ,80 the scale is quite reliable,
- If .80 ≤ α < 1,00 the scale is highly reliable.

The Cronbach Alpha value for the agile leadership scale was calculated as 0,961, the Cronbach Alpha value for the innovative behavior scale was calculated as 0,718, and the Cronbach Alpha value for the psychological empowerment scale was calculated as 0,890. According to these results, it has been determined that the scales are quite reliable. The analysis of demographic variables is presented in Table 1 below.

According to the analysis results of the demographic variables seen in Table 1, 53,4% of the participants who answered the questionnaire were female and 46,6% were male. The proportion of those aged 18-30 years is 64,1%; The proportion of those aged 31-40 years is 12,0%; The rate of those aged 41 and over is 23,9%; the rate of those who graduated from high school/associate degree is 32,2%; The rate of those with a bachelor's degree is 44,4%; The rate of graduates is 23,4%. The ratio of managers/supervisors is 27,3%; the rate of civil servants is 67,3%; The rate of senior managers is 5,4%. The rate of employees working in this workplace for 1-5 years is 61,0%; The rate of employees working for 6-10 years is 13,7%; The rate of employees working for 11-15 years is 13,2%; The rate of employees working for 16-20 years is 4,6%; The rate of employees for more than 20 years is 7,6%.

Explanatory Factor Analysis

Exploratory factor analysis was performed to determine the construct validity of the scales used in the study. KMO and Bartlett tests were performed in order to understand whether the scale was suitable for factor analysis. While the KMO coefficient is calculated to test the sample size, the normal distribution condition is examined with the Bartlett test. In this context, the KMO test measurement result should be .50 and above, and the Bartlett sphericity test result should be statistically significant (Jeong, 2004: 70). In the factor analysis process, factor load values were examined in the process of assigning or removing scale items from the scale. The agile leadership scale factor analysis results are shown in Table 2 below.

Çizelge 1. Demografik değişkenler
Table 1. Demographic variables

		n	%
Gender	Female	219	53,4
	Male	191	46,6
Age	18-30	263	64,1
	31-40	49	12,0
	41 and over	98	23,9
Educational status	High school/College	132	32,2
	Graduate	182	44,4
	Post- graduate	96	23,4
Your status	Manager/supervisor	112	27,3
	Officer	276	67,3
	Executive	22	5,4
Your seniority in this workplace	1-5 year	250	61,0
	6-10 year	56	13,7
	11-15 year	54	13,2
	16-20 year	19	4,6
	20 and more	31	7,6

Çizelge 2. Çevik liderlik ölçeği faktör analizi sonuçları
Table 2. Agile leadership scale factor analysis results

Dimension	Article	Factor load	Explained rate of variance
Dimension 1	ÇLÖ26	,961	46,120
	ÇLÖ30	,939	
	ÇLÖ29	,934	
	ÇLÖ28	,910	
	ÇLÖ31	,864	
	ÇLÖ25	,853	
	ÇLÖ24	,851	
	ÇLÖ23	,817	
	ÇLÖ32	,791	
	ÇLÖ22	,680	
Dimension 2	ÇLÖ18	,939	18,497
	ÇLÖ19	,904	
	ÇLÖ15	,881	
	ÇLÖ20	,821	
	ÇLÖ16	,764	
	ÇLÖ14	,759	
	ÇLÖ13	,676	
	ÇLÖ12	,673	
	ÇLÖ17	,665	
Dimension 3	ÇLÖ9	,813	7,041
	ÇLÖ10	,807	
	ÇLÖ8	,789	
	ÇLÖ11	,676	
Dimension 4	ÇLÖ7	,538	5,794
	ÇLÖ2	,836	
	ÇLÖ3	,831	
	ÇLÖ4	,806	
	ÇLÖ5	,585	
	ÇLÖ6	,523	
		KMO:0,689 X2:20200,596 p=,000	

In the factor analysis for the scale in Table 2, it is seen that the KMO value was calculated as 0,689. Accordingly, the sample size is suitable for factor analysis (KMO>0.500). Within the scope of the Bartlett test, the X2 value was calculated as 20200,596 and was found to be statistically significant (p<0,05). Accordingly, the normal distribution condition was met. According to the results of the KMO and Bartlett test, it was concluded that the data were suitable for factor analysis. As a result of factor analysis, it was determined that the scale consisted of 4 sub-dimensions. Items 1, 21 and 27 were not included in the analysis due to overlap. The innovative behavior scale factor analysis results are given in Table 3 below

Çizelge 3. Yenilikçi davranış ölçeği faktör analizi sonuçları
Table 3. Innovative behavior scale factor analysis results

Dimension	Article	Factor load	Explained rate of variance
Innovative Behavior Scale	YDÖ10	,974	72,548
	YDÖ9	,949	
	YDÖ1	,918	
	YDÖ11	,916	
	YDÖ8	,913	
	YDÖ2	,908	
	YDÖ5	,889	
	YDÖ3	,824	
	YDÖ6	,736	
	YDÖ4	,639	
	YDÖ7	,611	
		KMO:0,603 X2:8181,136 p=,000	

Çizelge 4. Psikolojik güçlendirme ölçeği faktör analizi sonuçları
Table 4. Psychological empowerment scale factor analysis results

Dimension	Article	Factor load	Explained rate of variance
Dimension 1	PGÖ10	,937	45,895
	PGÖ11	,906	
	PGÖ9	,863	
	PGÖ12	,855	
	PGÖ8	,789	
	PGÖ7	,748	
Dimension 2	PGÖ3	,913	20,866
	PGÖ2	,892	
	PGÖ1	,837	
Dimension 3	PGÖ4	,931	8,800
	PGÖ5	,929	
	PGÖ6	,709	
		KMO:0,854 X2:3509,744 p=,000	

In the factor analysis performed for the scale in Table 3, the KMO value was calculated as 0,603. Accordingly, the sample size is suitable for factor analysis (KMO>0,500). The X2 value was calculated as 8181,136 within the scope of the Bartlett test and was found to be statistically significant (p<0,05). Accordingly, the normal distribution condition was met. According to the results of the KMO and Bartlett test, it was concluded that the data were suitable for factor analysis. As a result of factor analysis, it was determined that the scale consisted of one dimension. Item 12 was not included in the analysis because the factor load was less than 0,300.

The results of the factor analysis of the psychological empowerment scale are presented in Table 4 below.

In the factor analysis for the scale in Table 4, the KMO value was calculated as 0,854. Accordingly, the sample size is suitable for factor analysis (KMO>0,500). The X2 value was calculated as 3509,744 within the scope of the Bartlett test and was found to be statistically significant (p<0,05). Accordingly, the normal distribution condition was met. According to the results of the KMO and Bartlett test, it was concluded that the data were suitable for factor analysis. As a result of factor analysis, it was determined that the scale consisted of 3 sub-dimensions.

Descriptive statistics of scale scores and normality test are given in Table 5 below.

In Table 6, the results of the Pearson correlation test performed to examine the relationship between psychological empowerment, agile leadership and innovative behavior are given below.

A moderate positive relationship (r=0,563) between Agile Leadership Dimension1 and Innovative Behavior Scale; A weak positive relationship between the Psychological Empowerment Dimension1 (r=0,154); There is a weak positive correlation (r=0,148) between the Psychological Empowerment Scale.

A weak positive correlation between Agile Leadership Dimension2 and Innovative Behavior Scale (r=0,195); A weak positive relationship between the Psychological Empowerment Dimension1 (r=0,150); There is a weak positive correlation (r=0,127) between the Psychological Empowerment Scale.

A weak positive correlation (r=0,155) between Agile Leadership Dimension3 and Psychological Empowerment Dimension1; There is a weak positive correlation (r=0,146) between the Psychological Empowerment Scale.

A weak positive correlation between Agile Leadership Dimension4 and Psychological Empowerment Dimension1 (r=0,137); There is a weak positive correlation (r=0,137) between the Psychological Empowerment Scale.

A moderate positive correlation between Agile Leadership Scale and Innovative Behavior Scale (r=0,365); A weak positive relationship between the Psychological Empowerment Dimension1 (r=0,191); There was a weak positive correlation (r=0,177) between the Psychological Empowerment Scale.

Çizelge 5. Ölçek puanlarına ait betimsel istatistikler ve normallik testi
Table 5. Descriptive statistics of scale scores and normality test

	n	Minimum	Maximum	Average	ss	Skewness	Kurtosis	Reliability
Agile Leadership Dimension1	410	1,00	5,00	3,63	1,10	-1,010	,295	,964
Agile Leadership Dimension2	410	1,00	5,00	3,46	1,04	-,385	-,809	,945
Agile Leadership Dimension3	410	1,00	5,00	3,61	0,90	-,520	,033	,925
Agile Leadership Dimension4	410	1,00	5,00	3,60	0,95	-,538	-,208	,922
Agile Leadership Scale	410	1,69	5,00	3,57	0,80	-,236	-,614	,957
Innovative Behavior Scale	410	1,64	5,00	3,90	0,78	-1,583	2,522	,953
Psychological Empowerment Dimension1	410	1,00	5,00	3,85	0,96	-,655	-,083	,924
Psychological Empowerment Dimension2	410	2,33	5,00	4,59	0,61	-1,612	2,011	,855
Psychological Empowerment Dimension3	410	2,67	5,00	4,62	0,57	-1,653	2,077	,841
Psychological Empowerment Scale	410	2,08	5,00	4,23	0,62	-,703	,078	,890

Çizelge 6. Psikolojik güçlendirme ile çevik liderlik ve yenilikçi davranış arasındaki ilişkinin incelenmesi
Table 6. Examining the relationship between psychological empowerment and agile leadership and innovative behavior

		Agile Leadership Dimension1	Agile Leadership Dimension2	Agile Leadership Dimension3	Agile Leadership Dimension4	Agile Leadership Scale	Innovative Behavior Scale	Psychological Empowerment Dimension1	Psychological Empowerment Dimension2	Psychological Empowerment Dimension3	Psychological Empowerment Scale
Agile Leadership Dimension1	r	1	,436**	,316**	,298**	,769**	,563**	,154**	,057	,068	,148**
	p		,000	,000	,000	,000	,000	,002	,252	,169	,003
Agile Leadership Dimension2	r		1	,651**	,634**	,861**	,195**	,150**	-,019	,071	,127*
	p			,000	,000	,000	,000	,002	,703	,152	,010
Agile Leadership Dimension3	r			1	,682**	,742**	,079	,155**	,039	,076	,146**
	p				,000	,000	,109	,002	,430	,124	,003
Agile Leadership Dimension4	r				1	,730**	,025	,137**	,050	,087	,137**
	p					,000	,612	,006	,311	,079	,005
Agile Leadership Scale	r					1	,365**	,191**	,037	,093	,177**
	p						,000	,000	,455	,060	,000
Innovative Behavior Scale	r						1	,200**	,268**	,122*	,247**
	p							,000	,000	,013	,000
Psychological Empowerment Dimension1	r							1	,393**	,254**	,923**
	p								,000	,000	,000
Psychological Empowerment Dimension2	r								1	,540**	,670**
	p									,000	,000
Psychological Empowerment Dimension3	r									1	,555**
	p										,000
Psychological Empowerment Scale	r										1
	p										

*p<0,05; **p<0,01

As a result of the correlation test, the regression test was performed to examine the effect for the variables that were related. The results of the regression test conducted to examine the effects of agile leadership and innovative behavior dimensions on the sub-dimensions of psychological empowerment are given in Table 7, Table 8 and Table 9 below.

Çizelge 7. Çevik liderlik ve yenilikçi davranış boyutlarının, psikolojik güçlendirme Boyut 1'e etkisinin incelenmesi
Table 7. Examination of the effects of agile leadership and innovative behavior dimensions on Psychological empowerment Dimension 1

Dependent variable	Independent variable	Beta	t	p	R2
Psychological Empowerment Dimension1	Agile Leadership Dimension1	-,010	-,148	,882	,062
	Agile Leadership Dimension2	,020	,286	,775	
	Agile Leadership Dimension3	,088	1,223	,222	
	Agile Leadership Dimension4	,062	,877	,381	
	Innovative Behavior Scale	,193	3,249	,001*	
Model: F=5,365 p=,000					

Çizelge 8. Yenilikçi davranışın, psikolojik güçlendirme Boyut2'ye etkisinin incelenmesi
Table 8. Examination of the effect of innovative behavior on the psychological empowerment Dimension 2

Dependent variable	Independent variable	Beta	t	p	R2
Psychological Empowerment Dimension2	Innovative Behavior Scale	,268	5,628	,000*	,072
Model: F=31,673 p=,000					

Çizelge 9. Yenilikçi davranışın, psikolojik güçlendirme Boyut3'e etkisinin incelenmesi
Table 9. Examination of the effect of innovative behavior on the psychological empowerment Dimension 3

Dependent variable	Independent variable	Beta	t	p	R2
Psychological Empowerment Dimension3	Innovative Behavior Scale	,122	2,482	,013	,015
Model: F=6,158 p=,013					

Çizelge 10. Çeviklik liderlik boyutları ve yenilikçi davranışın, psikolojik güçlendirmeye etkisinin incelenmesi
Table 10. Examination of agility leadership dimensions and the effect of innovative behavior on psychological empowerment

Dependent variable	Independent variable	Beta	t	p	R2
Psychological Empowerment Scale	Agile Leadership Dimension1	-,053	-,832	,406	,083
	Agile Leadership Dimension2	-,025	-,361	,718	
	Agile Leadership Dimension3	,088	1,251	,212	
	Agile Leadership Dimension4	,102	1,452	,147	
	Innovative Behavior Scale	,272	4,641	,000*	
Model: F=7,340 p=,000					

Çizelge 11. Çevik liderlik ve yenilikçi davranışın, psikolojik güçlendirmeye etkisinin incelenmesi
Table 11. Investigation of the effect of agile leadership and innovative behavior on psychological empowerment

Dependent variable	Independent variable	Beta	t	p	R2
Psychological Empowerment Scale	Agile Leadership Scale	,100	1,948	,052	,070
	Innovative Behavior Scale	,211	4,108	,000*	
Model: F=15,282 p=,000					

In Table 7, the model established to examine the effects of agile leadership and innovative behavior dimensions on psychological empowerment Dimension 1 is significant (p<0,05). When the results are examined, Innovative Behavior affects Psychological Empowerment Dimension1 positively (Beta=0,193). 6,2% of the change in Psychological Empowerment Dimension1 is explained by Innovative Behavior.

The model established in Table 8 to examine the effect of innovative behavior on the psychological empowerment Dimension2 is significant (p<0,05). When the results are examined, Innovative Behavior affects Psychological Empowerment Dimension 2 positively (Beta=0,268). 7,2% of the change in Psychological Empowerment Dimension2 is explained by Innovative Behavior.

In Table 9, it is seen that the model established to examine the effect of innovative behavior on the psychological empowerment Dimension 3 is significant (p<0,05). When the results are examined, Innovative Behavior affects Psychological Empowerment Dimension 3 positively (Beta=0,122). 1,5% of the change in Psychological Empowerment Dimension3 is explained by Innovative Behavior.

According to the results of this analysis, "H1: Agile leadership sub-dimensions and innovative behaviors have an effect on the sub-dimensions of psychological empowerment." The hypothesis has been accepted.

The results of the analysis examining the effects of agility leadership dimensions and innovative behavior on psychological empowerment are given in table 10.

The model established to examine the effect on the psychological empowerment scale in Table 10 is significant (p<0,05). When the results are examined, Innovative Behavior positively affects Psychological Empowerment (Beta=0,272). 8,3% of the variation in Psychological Empowerment is explained by Innovative Behavior.

According to the results of the analysis, "H2: Agile leadership sub-dimensions and innovative behaviors have an effect on psychological empowerment." The hypothesis has been accepted.

The results of the regression test conducted to examine the effect of agile leadership and innovative behavior on psychological empowerment are given in Table 11 below.

The model established to examine the effect on the psychological empowerment scale in Table 11 above is significant ($p<0,05$). When the results are examined, Innovative Behavior positively affects Psychological Empowerment (Beta=0,211). 7,0% of the variation in Psychological Empowerment is explained by Innovative Behavior.

According to the results of the analysis, "H3: Agile leadership and innovative behaviors have an effect on psychological empowerment." hypothesis was accepted.

Discussion

As a result, it was determined in the study that agile leadership and innovative behaviors have an effect on psychological empowerment and on the sub-dimensions of psychological empowerment. When the literature is examined, it is seen that the results of the research on agile leadership, innovative behaviors, and psychological capital support the results of this study:

Research conducted by Thomas and Velthouse in 1990 showed that employees avoid using their talents if they do not see themselves as competent and do not have enough self-confidence. Spreitzer (1995) found a positive relationship between psychological empowerment sub-dimensions and innovative behaviors. The studies of Tekin and Akgemci in 2019 determined that the dimensions of psychological empowerment had a positive effect on the dimensions of innovative work behavior. In addition, it has been observed that the competence dimension of psychological empowerment has no effect on any dimension of innovative work behavior. The studies of Redmond et al. in 1993 revealed that employees with innovative behaviors have high self-efficacy and adopt their work. In their study, Çekmecelioğlu and Eren (2007) found that meaning, autonomy and impact dimensions of psychological empowerment positively affect idea generation and research from creative behavior dimensions. According to the research, the dimension that most affected creative behaviors was autonomy. In the studies conducted by De Jong and Den Hartog (2010) and Özkan (2017), it was concluded that creative and innovative work behaviors are positively affected by self-efficacy. In their research, Çekmecelioğlu and Eren (2007) concluded that meaning, autonomy and influence, which are sub-dimensions of psychological empowerment, positively affect idea generation and research sub-dimensions, which are creative behavior sub-dimensions. However, it has been determined that the competence dimension has no effect on creative behavior.

Conclusion and Recommendations

In the study, the effect of agile leadership and innovative behaviors of employees in the information and communication sector across Türkiye on psychological empowerment and its sub-dimensions was investigated. According to the results of the Pearson correlation test conducted to examine the relationship between the variables, it was determined that agile leadership sub-dimensions and innovative behaviors were correlated with the psychological empowerment sub-dimensions, but this relationship was weak. According to the results of the research, agile leadership sub-dimensions and innovative behaviors have an effect on the sub-dimensions of psychological empowerment; agile leadership sub-dimensions and innovative behaviors have an effect on psychological empowerment; It has been determined that agile leadership and innovative behaviors have an effect on psychological empowerment.

Based on these results, it can be said that organizations need to create a culture of innovation and harmony in order to move forward in today's variable and uncertain environmental conditions. Managers who will create a culture of innovation and compliance need to invest in developing agile leadership characteristics. Organizations should develop policies and practices to support innovative behavior among employees. Organizations need to adopt attitudes appropriate to the importance of psychological empowerment in order to increase employee motivation, participation, and performance.

The high self-efficacy of employees in organizational activities improves their innovative behaviors. The fact that the employees find their work meaningful and participate in the activity processes and decisions ensures their psychological empowerment. Each dimension of innovative behavior is considered important in terms of organizational behavior. In order to develop innovative behaviors, it is seen that the perceptions of the employees about the meaning dimension should be increased. In addition, necessary practices such as reward and information sharing can be done for the realization of psychological empowerment.

Based on the research and analysis presented in this study, the following recommendations are offered for leaders looking to increase agile leadership, encourage innovative behavior, and support psychological empowerment:

- Developing Agile Leadership: Investments can be made in training and development programs focused on agile leadership. This can enable learning new skills such as strategic thinking, adaptability and change management, as well as improving existing leadership skills such as communication and collaboration.
- Encourage innovation: Employees can be provided with opportunities to generate and share ideas, and creativity and risk taking can be rewarded. Collaboration between teams and departments can be encouraged and a culture of learning can be fostered.

- Promote psychological empowerment: Employees can be provided with opportunities for free thinking, skill development, and a sense of organizational purpose and meaning. Participation in decision-making processes can be encouraged, personal and professional development of employees can be supported.
- Creating a supportive work environment: A workplace culture that supports innovation, psychological empowerment, and agile leadership can be developed. Resources can be provided for continuous learning and development, rewards can be made by appreciating success, and organizational cooperation and team spirit can be created.

Leaders who are committed to increasing agile leadership behaviors, encouraging innovative behaviors, and providing psychological empowerment in their employees should strive to develop strategies within this framework and put them into action in the workplace.

Limitations of the Study and suggestions for future studies

One of the limitations of the study is that it was conducted in only one sector. The results can be compared by conducting research in different sectors. Another limitation is that the study is not longitudinal. The study was carried out between 01.01.2023 and 30.03.2023. Further studies can be carried out at regular intervals to obtain more comprehensive findings. In the study, 410 samples were reached. By reaching a larger sample, the results can be compared. New models can be created with different variables that affect psychological empowerment. In addition, different quantitative and qualitative methods can be used.

Declaration of Research and Publication Ethics

This study has been carried out in accordance with the rules of scientific research and publication ethics. Also, the study has an ethics committee approval from İstanbul Esenyurt University Rectorate, Social and Human Sciences Scientific Research and Publication Ethics Committee.

Authors' Contribution

The contribution of both authors is half.

Declaration of Conflict of Interest

There is no conflict of interest for the authors or third parties arising from the search.

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Extended Abstract

Agile leadership and innovative behavior are two important factors that contribute to the success of organizations in today's rapidly changing business environment. On the other hand, psychological empowerment is a concept that positively affects the motivation, participation and performance of employees and attracts increasing attention in the field of organizational behavior. In the study, the effects of agile leadership and innovative behaviors on psychological empowerment and its dimensions were examined. “Agile Leadership Scale”, “Innovative Behavior Scale” and “Psychological Empowerment Scale” were used in the questionnaire form used in the research. The sample of the research consisted of 410 people working in the information and communication sector throughout Türkiye. The obtained data were analyzed by SPSS 21.0, the relationship between the scale scores and the Pearson correlation, and the effect was analyzed by regression analysis. As a result of the analysis of the collected data, the effect of agile leadership and innovative behaviors on psychological empowerment was tried to be determined. Then, the results of the analysis were evaluated, and in the conclusion part, the necessity of agile leadership and the importance of adapting to innovative behaviors and suggestions for business life in order to increase psychological empowerment were presented. When the literature was examined, no study was found related to the research subject. In this context, it is thought that the study will make an important contribution to the literature.

The aim of this research is to determine the effect of agile leadership and innovative behaviors of employees in the information and communication sector across Türkiye on psychological empowerment. In addition, it is to determine the effect of agile leadership and innovative behaviors on psychological empowerment, meaning, competence, autonomy and impact sub-dimensions.

In this study, it is assumed that agile leadership and innovative behaviors have an effect on psychological empowerment. Accordingly, the following hypotheses have been proposed:

H1: Agile leadership and innovative behaviors have an impact on meaning.

H2: Agile leadership and innovative behaviors have an impact on competence.

H3: Agile leadership and innovative behaviors have an effect on autonomy.

H4: Agile leadership and innovative behaviors have an impact on impact.

H5: Agile leadership and innovative behaviors have an effect on psychological empowerment.

The analysis of the obtained data was done with SPSS 21.0. In the study, the scale scores were calculated and the kurtosis and skewness coefficients were examined to determine the conformity of the scores to the normal distribution. The kurtosis and skewness values obtained from the scales are found to be between +3 and -3 for

normal distribution (Groeneveld & Meeden, 1984; Moors, 1986; Hopkins & Weeks, 1990; De Carlo, 1997). Since normality was ensured, parametric test techniques were used, the relationship between the scale scores was analyzed with the Pearson correlation test, and the effect was examined with regression analysis.

The population of the research consists of 258 746 people working in the information and communication sector operating throughout Türkiye (TUIK, 2022). In the study, 410 working people were reached between 01.01.2023 and 30.03.2023 using the convenience sampling method. 410 samples are considered sufficient for the study.

The questionnaire form used in the research consists of 4 parts. Demographic characteristics were used in the first part, "Agile Leadership Scale" in the second part, "Innovative Behaviors Scale" in the third part, and "Psychological Empowerment Scale" in the fourth part. A 5-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= Undecided, 4= Agree, 5= Strongly Agree) was used in the questionnaire. A 5-question form was created, including demographic information, such as gender, age, educational status, status, and seniority in the workplace.

In the study, the scale scores were calculated and the kurtosis and skewness coefficients were examined to determine the conformity of the scores to the normal distribution. The kurtosis and skewness values obtained from the scales are found to be between +3 and -3 for normal distribution (Groeneveld and Meeden, 1984; Moors, 1986; Hopkins and Weeks, 1990; De Carlo, 1997). Since the skewness and kurtosis values obtained from the scale scores were between +3 and -3, normality was ensured and parametric test techniques were used in our analyses. The relationship between the scale scores was analyzed by Pearson correlation and the effect was analyzed by regression analysis.

In the study, the effect of agile leadership and innovative behaviors of employees in the information and communication sector across Türkiye on psychological empowerment and its dimensions was investigated. According to the results of the analysis, it is seen that the H1 hypothesis was not accepted and the H2, H3, H4 and H5 hypotheses were accepted. The results of the analysis showed that agile leadership and innovative behaviors have an effect on psychological empowerment and on the dimensions of competence, autonomy and influence. In addition, it has been determined that it has no effect on the meaning dimension.

Based on these results, it can be said that organizations need to create a culture of innovation and harmony in order to move forward in today's variable and uncertain environmental conditions. Managers who will create a culture of innovation and compliance need to invest in developing agile leadership characteristics. Organizations should develop policies and practices to support innovative behavior among employees. Organizations must recognize the importance of psychological empowerment in increasing employee motivation, engagement and performance.

Based on the research and analysis presented in this study, the following recommendations are offered for leaders looking to increase agile leadership, encourage innovative behavior, and support psychological empowerment:

- Developing Agile Leadership: Investments can be made in training and development programs focused on agile leadership. This can enable learning new skills such as strategic thinking, adaptability and change management, as well as improving existing leadership skills such as communication and collaboration.
- Encourage innovation: Employees can be provided with opportunities to generate and share ideas, and creativity and risk taking can be rewarded. Collaboration between teams and departments can be encouraged and a culture of learning can be fostered.
- Promote psychological empowerment: Employees can be provided with opportunities for free thinking, skill development, and a sense of organizational purpose and meaning. Participation in decision-making processes can be encouraged, personal and professional development of employees can be supported.
- Creating a supportive work environment: A workplace culture that supports innovation, psychological empowerment and agile leadership can be developed. Resources can be provided for continuous learning and development, rewards can be made by appreciating success, and organizational cooperation and team spirit can be created.

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