

Research article

TEAMWORK AND ORGANIZATIONAL INNOVATION WITHIN DIGITAL ECONOMY: A MODERATING ROLE OF ORGANIZATIONAL CITIZENSHIP

Abbiha Waqar and Cetin Bektas

Abstract. The main aim of the study is to examine how team working influences organizational innovation within the framework of the digital economy and also to explore the role of organizational citizenship behaviour in moderating the relationship between team working and organizational innovation. The persistence of this research was to study how the moderating variable (Organizational Citizenship) mitigates the relationship between the independent variables (Organizational Learning, Creative Ability, Employee Motivation, Adequate Resource Allocation and, Team Working) and the dependent variable (Organizational Innovation). The primary data was collected by distributing questionnaires online through Google Docs to Turkish academicians working in 45 different Turkish universities. The sample size used for this study was 115 respondents. SPSS software was used to analyse the data for reliability, and correlation analysis. The results were contingent on the usual principles of statistics. Data used for this study is also reliable to see the results. Based on the results the hypotheses for dependent and independent variables were accepted and all of the independent variables (Organizational Learning, Creative Ability, Employee Motivation, Adequate Resource Allocation, and Team Working) have a significant effect on the dependent variable (Organizational Innovation) whereas the hypotheses including moderating variable were rejected as moderating variable (Organizational citizenship) does not moderate the relationship between independent variables and dependent variable. Moreover, the findings suggest that teamwork has a strong relation with organizational innovation whereas organizational citizenship does not moderate the relationship between teamwork and organizational innovation.

Keywords: creative ability; digital economy; employee motivation; organizational citizenship; organizational innovation; organizational learning; teamwork; digitalization; artificial intelligence.

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1. Introduction

“Organizational innovation” is used to describe the development or acceptance of a novel ear action by the organization [1]. There is a strong relationship between teamwork and organizational innovation. Innovation begins with a group of individuals who share a vision of what they want to achieve. Organisational innovation is only possible when the employees of the organization can work in teams. By working in teams, they can brainstorm ideas, come up with unique solutions, and develop strategies to achieve organizational goals. Innovation is the process of transforming an idea into reality. It entails collaboration, communication, and teamwork. In today’s world, there is a lot of competition going on, so every organization wants to attain a competitive advantage in the market which is only possible if they come up with creative ideas.

A team is defined as a workplace environment where members cooperate to achieve common objectives, share responsibility for work-related outcomes, and maintain a strong sense of social identity [2]. Moreover, teams' influence on a range of business outcomes is becoming more and clearer, but our understanding of how teamwork affects organizational innovation is still developing [2]. Furthermore, the fact that people tend to feel better when working in teams as opposed to more conventional working environments suggests that cooperation may also foster creativity. This mentality is connected to successful creative endeavours [3]. Besides that, the method that work is planned and the way the organization is set up when teamwork is present both influence innovation.

Moreover, an employee's inclination to go overhead and above at work is referred to as organizational citizenship. Even if they are not part of the fundamental job description, employees do constructive acts that are advantageous to their employers, their coworkers, and the company [4]. According to the literature, organizational citizenship does not moderate the relationship between organizational innovation and teamwork. Furthermore, industrial and organizational psychologists have studied volunteerism in organizations during the past ten years. This aspect of organizational life is known as "organizational citizenship behaviour" by psychologists [5].

Furthermore, the new digital technologies have a great impact on teamwork and organizational innovation. As the world is moving towards digitalization, it becomes necessary for organizations to incorporate digital technologies to benefit in the future. New digital technologies have had a profound impact on teamwork and organizational innovation in several ways such as collaboration and communication as digital tools such as video conferencing, instant messaging, and collaboration platforms made it easier for teams to collaborate than physical locations. This has led to more efficient knowledge-sharing, brainstorming, and problem-solving, enabling teams to work together seamlessly and innovate collectively. Secondly, with the rise of new digital technologies teams can work remotely and with flexible schedules. The teams can now include people from different parts of the world. This flexibility in team composition can lead to innovative solutions through the integration of different perspectives and experiences [6]. Last but not the least is Automation and Artificial Intelligence. Artificial intelligence and automation have the potential to revolutionise teamwork. Automating monotonous and routine work frees up team members to concentrate

on more innovative and creative elements of their roles. Additionally, AI can help with data analysis, trend forecasting, and creative problem-solving [7].

The main aim of the study is to examine how team working influences organizational innovation within the framework of the digital economy and also to explore the role of organizational citizenship behaviour in moderating the relationship between team working and organizational innovation. The significance of the paper is to explore how organizational citizenship behaviour such as voluntary actions and contributions of employees beyond their formal job roles) moderates the relationship between teamwork and organizational innovation. Moreover, it examines how positive teamwork and organizational citizenship mutually impact innovation outcomes.

This paper consists of five main sections. The first section is the introduction. The second section includes the literature review outlining the main concepts and variables. Furthermore, the third section is the methodology part highlighting the methods used for this research. The fourth section summarises the results and findings indicating the main result of the study. Lastly, the conclusion section concludes the main implications and future direction of the research.

2. Literature Review

2.1. Organizational Innovation

According to the literature the term “organizational innovation” refers to the “creation or adoption of an idea or behaviour new to the organization” [8,9,10]. The competence of an organization to innovate is a precondition for the successful utilization of inventive resources and new technologies [10]. The combination of creativity and innovation at the group level can be better explained in group work practices aimed at producing ideas or problem-solving [11]. The world is becoming more competitive day by day. It becomes essential for organizations to come up with new products, services, and strategies to remain competitive in the market. According to Schumper’s model, in the modern economic perspective “innovation is regarded as the main mechanism driving economic growth” [12,13]. Organizational innovation can also be essential for organizational performance. If organizations innovate in various ways, they can be successful in the market and also achieve a competitive advantage. Furthermore, there are various types of innovations, according to the literature, a third crucial type of innovation is organizational innovation, which refers to the workforce’s capacity to encourage adjustments that will be to the organization’s advantage [11].

2.2. Organizational Learning

According to the literature, researchers define organizational learning in various ways, but the most common definition of organizational learning is that it is a modification in the organization that takes place when the organization gains experience [14]. Most researchers would agree to define organizational learning as a “change in the organization's knowledge that occurs as a function of experience” [14]. When the organization gained new experience, more innovative ideas came into the organization. When the members of the organization gain different experiences and work in teams, there will be more organizational innovation as they have more fresh ideas for the organization. According to literature, “organizational learning occurs when

members use learning to solve a common problem, they are facing” [15]. According to the literature, there are generally two forms of organizational learning and that is exploitative learning and explorative learning. To begin with, exploitative learning is defined as the progress of new behavioural skills that are framed inside pre-existing knowledge and is also known as a ‘single loop’. Additionally, explorative learning is defined as when organizations develop behavioural capacities that substantially diverge from pre-existing knowledge and is also known as a ‘double loop’ [15]. Furthermore, there are various levels in the organizational learning process, and these are as follows [16]:

- Knowledge acquirement
- Information distribution
- Information interpretation
- Organizational memory

The above arguments conclude the following hypothesis:

H1: *Organisational learning has a positive effect on organizational innovation.*

2.3. Creative ability

In literature, creativity is often referred to as creative potential. The creative potential, skills, and capacities that a person possesses might be defined as their creative ability [17]. Self-efficacy, which is described as "the belief that one has the ability to produce creative outcomes," is strongly related to creative ability [18]. Therefore, this pertains to whether or not employees believe they have creative potential. Contrarily, the definition of practiced creativity is "the perceived opportunity to utilize creativity skills and abilities on the job" [17]. According to literature, a person won't be able to use their creative talent if their environment prevents them from producing their best work. Moreover, since there won't be anything to assess or observe, this inability to apply creative skills will probably go unreported [17]. Personnel with substantial innovative potential are more likely to exercise creativity when they sense robust backing from the business, and a numeral of crucial factors must exist within a company for its work atmosphere to encourage individual creativity [19]. When people in the workstation observe themselves as having inventive perspectives but are not aware of the possibility of consuming or practicing that potential, substantial unexploited organizational resources can exist. Being capable of recognizing these undiscovered assets may be particularly useful in numerous organizations in which individuals are persistently being stated to 'do more with less'. Amongst other suggestions, the capacity to utilize one's imaginative abilities and capacities within the work environment may subsidize work fulfilment and expanded maintenance [17]. According to Guilford, "the inventive individual has novel ideas" and will yield "uncommon, however worthy, responses" [19]. Moreover, according to Amabile, "Innovation usually refers to the implementation of creative ideas in an organizational context". Hence, person and group inventiveness assists as the root of organizational innovation [20]. The above discussion concludes the subsequent hypothesis.

H2: *Creative ability has a positive effect on organizational innovation.*

2.4. Employee Motivation

Kathleen O'Donnell defines employee motivation as the degree of drive, dedication, and innovation a company's employees contribute to what they do. They eagerly anticipate expanding their knowledge, challenging their talents, and assuming new duties [21]. Monitoring the performance of the staff members has a significant impact on Organizational Innovation [22]. According to the literature, innovation is positively correlated with employee performance [22]. According to Tidd and Bessant, ways to persuade personnel (rewards) have a positive effect on innovation performance [13]. According to Mckeown, as part of its "Goggle-time" program, it encourages employees to develop inventions and research future developments and advances in technology. Google permits workers to utilize 20% of their workday on their creative endeavours [13]. Employee motivation is crucial in organizational innovation. If the employees are motivated, they come up with more creative and unique ideas. Better organizational results may have been associated in particular, with staff engagement techniques for developing employee knowledge, skills, and abilities (KSAs), enabling workers to make effective decisions, and inspiring employees to achieve their goals [23]. Workers at forward-thinking firms have an elevated sense of operational independence. Key personnel may be encouraged by creative companies to turn into creative promoters [24]. The above literature can help to develop the third hypothesis.

H3: Employee motivation has a positive effect on organizational innovation.

2.5. Adequate Resource Allocation

Numerous studies have found a direct correlation between project creative levels and resource allocation. Beyond the apparent practical constraints that severe resource shortages impose on what people can accomplish in their employment, people's psychological well-being may be impacted by views they hold about the fundamental worth of the initiatives they have taken [20]. According to the literature, companies like Google have promoted innovation by giving creative projects enough resources and creating an innovative culture. Additionally, one significant aspect that affects organizational innovation inside a corporation is the resources available for innovation [24]. Therefore, the assets accessible for innovation in a firm have a positive effect on organizational innovation [24]. Additionally, innovative businesses provide enough resources for innovation, and the resources offered may be in the form of money, people, or enough time to pursue original ideas [24]. The above debate concludes the following hypothesis:

H4: Adequate resource allocation has a positive effect on organizational innovation.

2.6. Teamwork

The definition of a team in the literature is a working environment where people cooperate to attain their objectives, where they share responsibility for the results of their work, and where people perceive them as having a complete social identity [2]. To improve creativity and the capacity to solve problems creatively, teamwork can do so in two ways. First, it alters people's affective experiences, cognitive frameworks, and attitudes. Second, teamwork is linked to structural alterations within the organization, which improve the flow of information and make

businesses more adaptable [2]. In addition, since people prefer a sense of good when they operate in groups, collaboration may also enhance innovation [3]. The second reason that cooperation spurs creativity has to do with how work gets done and how the organization is set up when there is teamwork [2]. Last but not least, because teamwork is frequently linked to flatter organizational structures, they are seen as the finest. The decision-maker may be easily notified when the team has an innovative concept so that it can be implemented before it gets dated. The above literature can help to develop the fifth hypothesis.

H5: Teamwork has a positive effect on organizational innovation.

2.7. Organizational Citizenship

Organ defined organizational citizenship behaviour as "Individual behaviour that is discretionary, explicitly recognized by the formal reward system and that in the aggregate promotes the functioning of the organization" [25]. Organizational citizenship has a positive relationship with organizational innovation. Every employee working in the organization knows the duties and knows that specific behaviours are expected of them [26]. They also know that there are certain limits when it comes to doing a job. Therefore, when employees exceed expectations, this behaviour is called organizational citizenship [27]. Organizational citizenship behaviour is crucial to achieving organizational innovation because it is the commitment of individuals or a person to a particular organization. When employees working in any organization can go above and beyond, it leads to organizational innovation. The above debate concludes the following hypothesis.

H6: Organizational Citizenship moderates the relationship between organizational learning and Organizational innovation.

H7: Organizational Citizenship moderates the relationship between creative ability and Organizational innovation.

H8: Organizational Citizenship moderates the relationship between employee motivation and Organizational innovation.

H9: Organizational Citizenship moderates the relationship between adequate resource allocation and Organizational innovation.

H10: Organizational Citizenship moderates the relationship between teamwork and Organizational innovation.

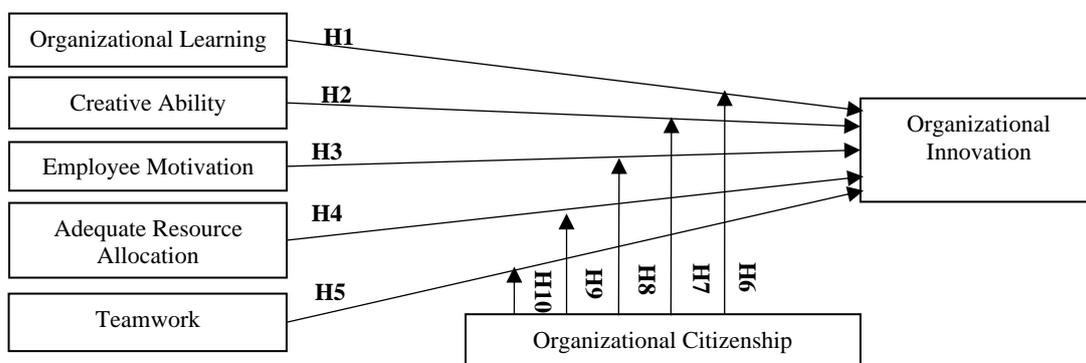


Figure 1. Theoretical Framework

Source: Developed by the authors

2.8. Impact of Digital Technologies on Teamwork

Digital technologies have allowed teams to work together regardless of their physical location. Virtual meetings and seminars are now an integral part of team collaboration. These platforms provide interactive features such as screen sharing, virtual whiteboards, and breakout rooms, enabling productive brainstorming and discussion sessions. In addition, digital technologies facilitate the sharing of knowledge and expertise within a team [28]. Moreover, digital technologies have transformed teamwork by enabling remote collaboration, improving communication, promoting flexibility, and improving project management. While these technologies offer many benefits, teams should also be aware of the potential challenges and work to develop effective strategies to leverage their benefits while minimizing risks [29].

2.9. Impact of Digital Technologies on Organizational Innovation

Organizations are evolving in a world increasingly flooded with digital technology. Digital technologies have dramatically changed the way organizations innovate. They have accelerated idea generation, improved collaboration, enabled data-driven decision-making, and opened new avenues for disruptive business models. Embracing these technologies and effectively managing the changes they bring can help organizations stay competitive and thrive in an increasingly digital and innovative landscape [30]. Furthermore, as digital technologies become pervasive, these properties provide environments of open and flexible affordances that result in two unique characteristics of organizational innovation with digital technologies: convergence and generativity [30].

2.10. Impact of Digitalization on Employees

Constantly changing and digitizing the thing that brings it there has a wonderful impact on the workforce at different levels such as rationalization, knowledge, productivity, efficiency, skills, etc. [6]. Digital learning platforms can improve Company internal training by hosting appropriate training and development programs for employees and leaders, where they can attend affiliate training within their business hours, according to their speed and theme choice. These new training methods support the acquisition of skills based on strategies tracking organizations and who the education system is not suitable for the job. However, on the contrary, asking the staff can never stop learning can track the progress of technology and avoid rationalization in the long term [6].

3. Methods

3.1. Data and Sources

There were different tools used to gather quantitative data. The research was supported using primary data as it is solely based on a questionnaire, where the questionnaire was premeditated based on all the variables which include Dependent Variable (Organizational Innovation), Independent Variables (organizational learning, creative ability, employee motivation, adequate resource allocation and team working) and moderating variable (Organizational Citizenship).

The respondents selected for this research are Turkish academicians representing 45 different Turkish universities. A sample size of 115 respondents was selected and questionnaires were distributed online through Google Docs to get their opinions. The sampling technique used for this research was convenient sampling.

There are two sections of the questionnaire (see Appendix A). The initial part includes close-ended questions related to all the variables. The scale was utilized to evaluate the replies of all the variables which include the Dependent variable (Organizational Innovation), Independent variables (organizational learning, creative ability, employee motivation, adequate resource allocation, and teamwork), and moderating variable (Organizational Citizenship) Likert Scale ranging from (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree and (5) Strongly Agree. The statements of all the variables can be collected using different journal articles that were used for literature and also from the questionnaire that was already prepared by the European Union [31].

There were different numbers of items used to measure each variable. Organizational innovation is measured by 3 items: e.g., 'Management actively seeks innovative ideas', etc. Organizational Citizenship is measured by 10 items including items such as, I support my assistants and co-workers to learn skills in which I am efficient, etc. Creative ability is measured by 3 items, such as 'My previous experience makes me more creative in the workplace', etc. Adequate resource allocation is measured by 2 items: 'I have entree to adequate equipment to commendably execute my work', etc. Teamwork is measured by 3 items: 'There are few conflicts among team members at work', etc. Employee motivation is measured by 4 items such as 'I am a versatile person, and I can easily come up with innovative solutions no matter the work field', etc. Lastly, Organizational Learning is measured by 4 items such as 'In our company, we frequently plan internal training for our personnel', etc.

The second part is the demographic section including questions related to gender, age, marital status, academic title, and experience. The nominal scale was used for the demographic questions. The numbering has been allotted to them in sequence to give them the coding so that it would be easier to generate the results. The binary coding has been set for the questions that consist of the answers as 'Yes' or 'No' and 'Male' or 'Female'.

3.2. Social and Demographic Portrait of the Respondents

The sample for this research includes 115 Turkish academicians working in 45 different Turkish universities. Section 2 of the questionnaire includes the demographic questions. The demographic portrait of the respondents shows that out of 115 respondents, 38.6% of them are female whereas 61.4% of them are male as shown in Figure 2 below. Moreover, the marital status of 115 Turkish academicians includes 23.5% of them are single, 72% of them are married and 4.5% of them are divorced/separated as shown in Figure 3 below. Furthermore, the academic title of 115 respondents includes 15.2% Professors, 24.2% Associate Professors, 20.5% Assistant Professors, 12.9% Research Assistants, and 27.3% Lecturers as shown in Figure 4 below. Lastly, out of 115 respondents, the maximum no of years of working experience of Turkish academicians is 40 years whereas the minimum no of years of working experience is 1 year. Lastly, some people stay in the same organization and do not want to change frequently, and this also matters for organizational citizenship and innovation. According to the

data collected for this study, the maximum no of years of Turkish academicians working for the current organization is 32 years whereas the least is 1 year.

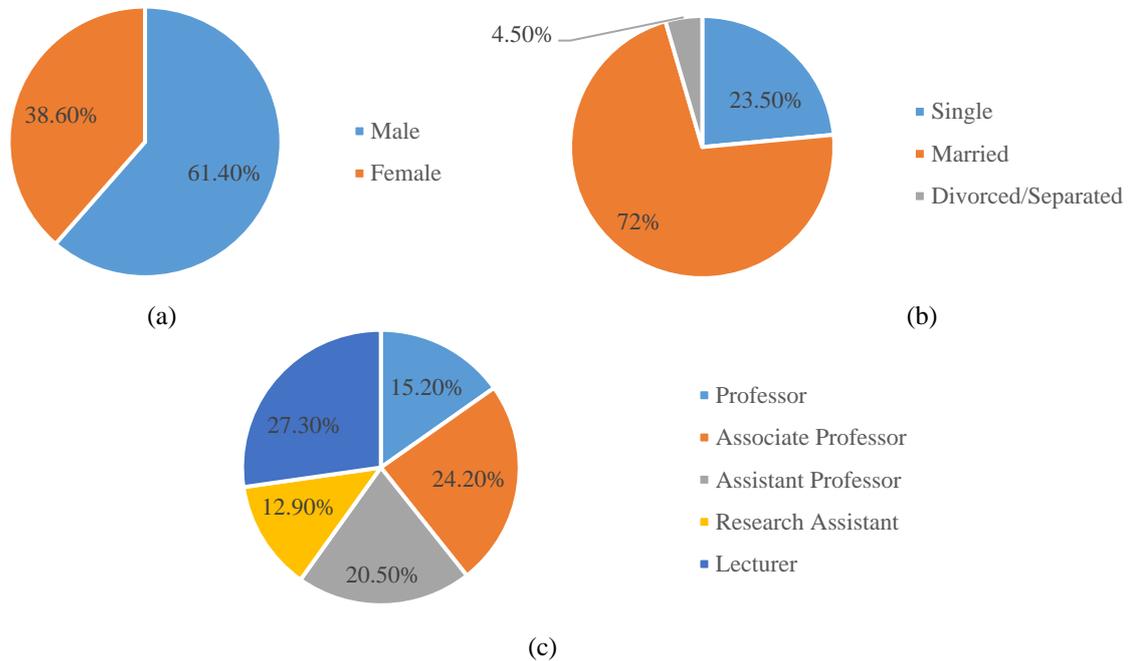


Figure 2. Social and Demographic portrait of the respondents: (a) Gender; (b) Marital Status; (c) Academic Title

Source: Developed by the authors

3.3. Research Methods

There are different statistical techniques used to test the relationships of variables. The data collected for this study were analysed by using SPSS software. SPSS was used to test the relationship between variables, and their correlation by using the Pearson coefficient, reliability analysis (Cronbach's alpha), ANOVA tests, etc. These techniques were used to test the relationship between variables [4]. These statistical tests were used for hypotheses testing as they determine whether a predictor variable has a statistically significant relationship with an outcome variable or not [32].

The most popular method for determining a linear connection is the Pearson correlation coefficient (r). Another inferential statistic that can be used to assess statistical hypotheses is the Pearson correlation coefficient. We can specifically determine whether there is a meaningful correlation between two variables [33]. Additionally, the reliability of a group of survey items is measured through reliability analysis (Cronbach's alpha coefficient). If a group of items regularly assesses the same attribute, use this statistic to assist in making that determination. On a uniform 0–1 scale, Cronbach's alpha assesses the degree of agreement. Higher numbers imply items with greater agreement [34]. Its benefits make Cronbach's alpha a popular option for gauging internal consistency. First off, since only the item scores and the total number of items are needed, it is simple to compute and analyse. Second, it is extensively used and published in other fields and journals, making it easier to compare and share findings. Third, it can be applied to a variety of scales and items, including binary replies, multiple-choice

questions, and Likert scales. Fourthly, it can be modified to take into account various circumstances, like when the things have varying weights, when the items are nested within groups, or when the items are missing [35]. Furthermore, an ANOVA test is a way to find out if survey or experiment results are significant. To determine whether the survey or experiment results are meaningful, perform an ANOVA test. In other words, they assist you in determining whether you should accept the alternative hypothesis or reject the null hypothesis. It offers the general test for group mean equality. It can reduce the prevalence of type I errors, or false positive findings. If the normalcy assumptions are valid, the test is more effective because it is parametric [36].

4. Results and Discussion

4.1. Reliability Analysis

When the finding's goal is frequently measured, reliability analyses the stability of the results. Using Cronbach's alpha approach, the reliability of data about latent variables and operational constructs was evaluated [37]. While the construct is a fictitious variable that is assessed in it, Cronbach's alpha is a directory of dependability related to the discrepancy accounted for by the true mark of the underlying theory. In social sciences, if Cronbach's alpha is greater than 0.60, it indicates reliable data and if less than 0.60, it indicates that data is not reliable. For this study, we use Cronbach's alpha coefficient for evaluating the reliability of measurement tools. Table 1 indicates that all the variables of this study have Cronbach's alpha larger than 0.60, which indicates that the data is reliable.

Table 1. Reliability Analysis of the Organizational Innovation Scale

Variable Names	Cronbach's Alpha	No. of Items
Organizational Innovation	0.932	3
Organizational Learning	0.816	4
Creative Ability	0.749	3
Employee Motivation	0.716	4
Adequate Resource Allocation	0.860	2
Team Working	0.600	3
Organizational Citizenship	0.775	10

Source: Developed by the authors using SPSS software

4.2. Correlation Analysis

A statistical method known as correlation illustrates how closely two variables are connected. We can interpret the correlation analysis for this study by Pearson's Correlation Coefficient [26]. The link between both continuous variables is assessed using this statistical method. The bi-variate correlation shows how a change in the independent variable causes a variation in the dependent variable. There is perfect correlation if the "value is near ± 1 , then it's said to be a perfect correlation, which means that if one variable increases, the other variable tends to also increase (if positive) or decrease (if negative)" [38]. The variations within the variables can be seen in Table 1.

In Table 2, there is 1 in the diagonal, and this is a mirror effect, as below and upper than 1 value are the same. Only the values that are significant at 0.01 level are regarded. This means that they are significant at the 0.01 level.

Table 2. Pearson correlation between variables

Variables	OI	OC	OL	CA	EM	ARA	TW
OI	1						
OC	0.160	1					
OL	0.643**	0.116	1				
CA	0.417**	0.133	0.358**	1			
EM	0.252**	0.106	0.251**	0.480**	1		
ARA	0.387**	0.178	0.288**	0.525**	0.289**	1	
TW	0.432**	0.131	0.451**	0.442**	0.394**	0.336**	1

Note: **Correlation is significant at the 0.01 level (2-tailed)

OI = Organizational Innovation; OC= Organizational Citizenship; OL= Organizational Learning; CA= Creative Ability; EM= Employee Motivation; ARA= Adequate Resource Allocation; TW = Team Working

Source: Developed by the authors using SPSS software

The above Table 2 indicates that the variables are perfectly positively correlated with each other. These values are positive which means that if one variable increases (dependent variable) another variable (independent variable) also increases. This also states that there is a strong association between the two variables. The strongest correlation exists between Organizational Innovation and organizational learning, creative ability, employee motivation, adequate resource allocation, and teamwork, as all the values correlations are significant at the 0.01 level as shown in above Table 2.

4.3. Hypotheses Testing

The likelihood of receiving outcomes from a statistical hypothesis test that are at least as extreme as the actual outcomes, assuming the null hypothesis is true, is known as the p-value in statistics. A p-value is a statistical measurement that is additionally used to check a hypothesis against actual data. The estimated probability is used in the p-value method of hypothesis testing to decide whether there is sufficient proof to reject the null hypothesis. Normally, a p-value of 0.05 or less is regarded as statistically significant, and in that case, the null hypothesis should be disregarded. If the p-value is larger than 0.05, the null hypothesis is not precluded because the deviation from it is not statistically significant [39].

Table 3 shows the p-values for all the variables. The p-values are perfectly significant for all the variables so, it indicates that the result is statistically significant, and hence null hypothesis is rejected whereas the alternate hypothesis is supported Therefore, hypotheses H1, H2, H3, H4, and H5 are supported and there is a significant relationship between the dependent variable (organizational innovation) and independent variables (organizational learning, creative ability, employee motivation, adequate resource allocation and team working).

Table 3. The findings of p-values for dependent and independent variables

Variable	P-Value	Result
Organizational Learning → Organizational Innovation	0.000	Supported
Creative Ability → Organizational Innovation	0.000	Supported
Employee Motivation → Organizational Innovation	0.006	Supported

Adequate Resource Allocation → Organizational Innovation	0.000	Supported
Team Working → Organizational Innovation	0.000	Supported

Note: → P-value is less than 0.05, indicates that hypothesis (H1 – H5) are accepted (supported)

Source: Developed by the authors using SPSS software

4.4. Moderation Analysis

The moderator variable is the third variable used to inspect the power of the association amid the independent and dependent variables. In addition, the moderator explains the magnitude of change among the independent and dependent variables, quantified by the linear regression coefficient of the product term. The product term also called the interaction term, states the experimental consequence of the moderator on the relationship between the independent and dependent variables. In moderation analysis, it is important that the moderator variable does not have a causal relationship with the independent variable [40]. Moderation analysis is run in SPSS to see if the moderating variable (Organizational citizenship) moderates the affiliation amongst the dependent variable (Organizational Innovation) and independent variables (Organizational Learning, Creative Ability, Employee Motivation, Adequate Resource Allocation, and Teamwork). To begin with moderation analysis, we first calculate the standardized values of an independent variable and moderating variable. In addition, we calculate the intercept of each independent variable with the moderating variable by multiplying the standardized value of an independent variable and the moderating variable calculated before. Lastly, we run the linear regression analysis to test the interface effect amongst dependent, independent, and moderating variables.

The outcomes of the linear regression analysis demonstrate a significant causal connection between the independent variables (Organizational Learning, Creative Ability, Employee Motivation, Adequate Resource Allocation, and Teamwork) and the dependent variable Organizational Innovation (p-value = 0.000). Since the p-value is ≤ 0.05 , the relationship between independent variables and dependent variables is significant. A one-way ANOVA test is implied to see the causal influence of the dependent and independent variables.

Moreover, moderation effect results can be seen in the coefficients table after running a linear regression analysis. We can see the p-value of the interaction term of each independent variable with the moderating variable. Table 4 below shows the p-value of the interaction term (INT).

Table 4: Interaction Term (INT)

Variables	p-value
INT (Organizational Citizenship and organization Learning)	0.079
INT (Organizational Citizenship & Creative Ability)	0.122
INT (Organizational Citizenship & Employee Motivation)	0.171
INT (Organizational Citizenship & Adequate Resource Allocation)	0.863
INT (Organizational Citizenship & Team Working)	0.304

Source: Developed by the authors using SPSS software

We can see that the interaction term (INT) has p-values greater than 0.05 as shown above in the table. Since the P-value is higher than 0.05, we can consider that the moderator variable Organizational Citizenship does not impact the relationship between independent variables

(Organizational Learning, Creative Ability, Employee Motivation, Adequate Resource Allocation, and Teamwork) and the dependent variable Organizational Innovation. So, the above hypotheses H6, H7, H8, H9 and H10 are rejected.

5. Conclusions

To conclude, the study's primary goal was to ascertain if organizational citizenship plays a moderating role in teamwork and organizational innovation in Turkish universities. Moderation, reliability, and correlation analysis were carried out to find the results of this study. The findings proposed that organizational innovation had an optimistic effect of 0.432 on teamwork ($p=0.000$, $p<.05$). Teamwork is one of the crucial variables to achieving organisational innovation. The results also matched the previous studies according to Fay and his colleagues [2]. Turkish academicians who had more team working skills and worked more in teams were the main source of organizational innovation. The other outcome of this study indicates that organizational innovation also had a positive effect of 0.643 on organizational learning ($p=0.000$, $p<.05$). To accomplish organizational innovation, this aspect is also very crucial. The outcomes of this discovery are consistent with those of earlier research conducted by [17,18]. They said that when the organization gained new experience, more innovative ideas came into the organization. The members of the organization gain different experiences and work in teams, and there will be more organizational innovation as they have more new ideas for the organization [15]. The third finding of this study indicates that organisational innovation had a positive effect of 0.417 on creative ability ($p=0.000$, $p<.05$). The outcomes of this discovery also have connections to earlier research done by other scholars [17,18]. The studies proved that employees with significant innovative thinking perceive substantial backing from an organization, they are encouraged to fully exercise innovations and a sum of crucial factors must exist within a corporation for its work atmosphere to encourage discrete resourcefulness [19]. Individuals who are more socially curious, involved in discussions with other people who make new friends, and are extroverts are more creative. This in turn leads to organizational innovation. The fourth finding of this study indicates that organisational innovation had a positive effect of 0.252 on worker motivation ($p=0.006$, $p<.05$). The research findings are consistent with those from earlier research [21,34]. According to the literature, innovation is positively correlated with employee performance [22]. The last finding of this study indicates that organizational innovation had a positive effect of 0.387 on adequate resource allocation ($p=0.000$, $p<.05$). The outcomes of this discovery are consistent with those of earlier research [20,24]. Additionally, one significant aspect that affects organizational innovation inside a corporation is the resources available for innovation [24]. Therefore, organizational innovation is positively impacted by the firm's innovation resources [24].

Furthermore, digital technologies such as artificial intelligence, virtual reality, automation, etc. have a strong impact on teamwork and organizational innovation. These technologies help organizations stay competitive in the market with the help of these technologies and come up with creative and innovative ideas and solutions. Moreover, Artificial intelligence and automation have the potential to revolutionize teamwork. Automating monotonous and routine work frees up team members to concentrate on more innovative and creative elements of their roles [29,30].

Lastly, to summarize the results of this study, it was attested that the dependent variable (organizational innovation) has a resilient positive relation with the independent variables (organizational learning, creative ability, employee motivation, adequate resource allocation, and teamwork). Moreover, the moderating variable (organizational citizenship) does not moderate the relationship between a dependent variable and independent variables. Turkish academicians who are more creative are more extroverted, social, and have a strong grip on the environment. They are always passionate about exploring creative ideas for the organizations. Moreover, they have powerful thoughts and always want to investigate new things around them [26].

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Appendix A

Section 1

1. Rate the following statements from 1 to 5.

List of questions	1	2	3	4	5
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Organizational Citizenship					
1. Encourages others to speak up at the meetings.					
2. Helps others who have been absent.					
3. Frequently makes creative suggestions to co-workers.					
4. I always listen to co-worker's problems and try to suggest solutions.					
5. I put extra effort into my job.					
6. I help my subordinates and co-workers to learn skills in which I am efficient.					
7. I praise the working conditions of my organization.					
8. I welcome good change and never resist it.					
9. I have always been thinking about innovative work methods.					
10. I consult my colleagues whenever possible.					
Organizational Innovation					
11. We develop adequate plans and schedules for the implementation of new ideas					
12. We investigate and secure the funds needed to implement new ideas.					
13. Management actively seeks innovative ideas.					
Creative Ability					
14. My previous experience makes me more creative in the workplace.					
15. My everyday routine does not impede my creativity.					
16. I am confident that I can develop creative ideas to solve problems, and I am motivated to implement solutions.					

Adequate Resource Allocation					
17. I have access to sufficient equipment to effectively execute my work.					
18. I have access to sufficient technical competence for elaborated work on ideas.					
Team Working					
19. I have frequent and open (trust, openness) communication with my co-workers.					
20. There are few conflicts among team members at work.					
21. I prefer to work with others in a team effort rather than alone.					
Employee Motivation					
22. Creativity at work is important to me.					
23. I am a versatile person, and I can easily come up with innovative solutions no matter the work field.					
24. I like taking risks at work.					
25. Training and development enhance skills and ability to improve.					
Organizational Learning					
26. In our organization, we often organize internal training for our employees.					
27. Our organization has employees whose job is related to searching for external information.					
28. Our competitors are an extremely important source for learning new methods and services.					
29. In our organization, we explicitly reward employees who are a source of quality information.					

Section 2	
Gender	Academic Title:
<input type="checkbox"/> Male <input type="checkbox"/> Female	<input type="checkbox"/> Professor <input type="checkbox"/> Associate Professor <input type="checkbox"/> Assistant Professor <input type="checkbox"/> Research Assistant <input type="checkbox"/> Lecturer
Age: Please Specify: _____	Marital Status: <input type="checkbox"/> Single <input type="checkbox"/> Married <input type="checkbox"/> Divorced/Separated

Number of years working for the current enterprise/organization: _____

Total no. of years of working experience: _____

Source: (I-CREATE -Lifelong Learning Programme)

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