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Investigating the relationship between psychological capital, teachers' job satisfaction and organizational climate with teachers' innovative behaviors (case study: public schools in Mahabad)

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Abstract

The purpose of this study was to investigate the relationship between psychological capital, teachers' job satisfaction, and organizational climate with teachers' innovative behaviors. The method of conducting the current research was descriptive correlation. The study population was public school teachers in Mahabad city, who selected 341 people by random sampling method and participated in the research (N=3000). A standard questionnaire was used to collect field data. The questionnaires included the Psychological Capital Questionnaire (Luthans et al, 2007), Job Satisfaction (Spector, 1985), Organizational Climate (Jao and Leo, 2009), and Employee Innovative Behavior (DeJong and Dan Hartog, 2008). The results showed that the correlation coefficient of psychological capital and its components i.e. hope, optimism, resilience and self-efficacy with teachers' innovative behaviors is positive and significant. The correlation coefficient of job satisfaction and its components i.e. pay, promotion opportunities, supervisor, working conditions and job benefits, colleagues and work environment factors with teachers' innovative behaviors is positive and significant. The correlation coefficient of the organizational atmosphere and its components, i.e. group spirit, intimacy, disinterestedness, distancing, considerateness, influence and dynamism and emphasis on production with innovative behaviors of teachers is positive and significant. The results obtained from the step-by-step regression analysis showed that psychological capital, organizational atmosphere and job satisfaction have a significant effect on teachers' innovative behaviors. Therefore, it can be concluded that psychological capital, teachers' job satisfaction and organizational atmosphere lead to an increase in teachers' innovative behaviors.

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Introduction

Innovation in today's competitive world is not only vital for the growth of organizations but also for their existence (Strobl et al, 2019). Over the past twenty years, attention to "innovation" as a research topic has increased (Singh & Sarkar, 2022). In today's educational organizations, schools must be constantly innovative in order to remain competitive in the future and in the long term. Existing environmental crises have changed the usual systems and endangered the survival of the organization (Sammut, Briffa, & Curtis, 2021). In order to gain competitive advantage and increase reputation, innovation is an important strategic choice for crisis-induced breakdowns. It is clear that innovation is an important factor in helping schools survive in a changing world (Su et al, 2020). One of the ways most organizations innovate is to invest in their teachers' ability to innovate. The innovative behavior of teachers is the purpose of teachers in creating, persuading and implementing new ideas, educational services, teaching, processes and procedures in work tasks, work groups or class and school (Hoang et al, 2022). The survival and efficiency of educational systems depends on the diverse knowledge and expertise, abilities and skills of human resources, especially their teachers. The more prepared, competent and innovative teachers are, the more they will contribute to improving the efficiency of the education system (Shanker et al, 2020). Innovative behavior of employees refers to behaviors that include creating and encouraging new ideas (either by the person himself or obtained from others) and achieving and implementing new ideas at work. If schools do not strengthen innovative behavior in their teachers, they cannot achieve innovation in their education, services, and processes, because the engine driving innovation in schools is innovative teachers and their innovative behavior (Teng et al, 2020). Some organizations make a lot of investments in creating innovation, but they look for the key to innovation outside the organization, and in this case, despite the large investments, they do not achieve the desired result, while that innovation comes from within organizations and schools and through employees and teachers; Therefore, considering the importance of teachers' innovative behaviors, the relationship between psychological capital, employees' job satisfaction, and organizational climate with teachers' innovative behaviors has been examined in the present study.

Thien, Adams & Koh (2021) believe that psychological capital not only enables employees to commit to their jobs in the best way, but also promotes positive behaviors such as doing challenging work. The research also shows the role of psychological capital in employee innovation (Hsu & Chen, 2017; Alshebami, 2021; Wang, Chen & Zhu, 2021; Kumar, 2022). The Iranian education system faces structural challenges such as centralization, traditional teaching methods, and teacher burnout (Roudgarnezhad, 2023). In Mahabad city, these challenges, given the bilingual conditions and local characteristics, can lead to a decline in educational innovation and prevent teachers from exhibiting innovative behaviors. This study seeks to examine the relationship between psychological capital, job satisfaction, and organizational climate with the innovative behaviors of Mahabad teachers in order to provide practical solutions to strengthen innovation in this context.

Psychological capital is a person's positive mental state with self-efficacy in performing tasks and efforts necessary to achieve certain achievements, positive documents about current and future success (optimism), persistence in the direction of the goal and, if necessary, guidance. Path to goal to succeed in the face of it (hope), people can survive and rise again, even surpassing the initial effort to achieve success (resilience) (Robusto et al, 2019). Studies have shown that organizations that lack psychological capital will not have the necessary productivity and effectiveness (Purwanto et al, 2021). Psychological capital, which consists of four components: optimism, hope, self-efficacy, and resilience, directly and indirectly affects job satisfaction (Zia et al, 2022). Employees with high levels of psychological capital generally experience greater job satisfaction due to their belief in their abilities (self-efficacy), setting and pursuing challenging goals (hope), resisting problems (resilience), and having a positive outlook on the future (optimism). This job satisfaction, in turn, interacts with psychological capital to influence the organizational climate, creating a positive, supportive, and dynamic environment in which members of the organization feel secure, valued, and motivated.

Employee satisfaction in general and teachers' job satisfaction in particular are of interest to all schools because they understand its importance and impact on their overall growth and development (Alshebami, 2021). The concept of employee satisfaction is very broad: Robbins et al (2015) define it as "feelings or emotional responses of employees in relation to factors such as the work environment, work

experience and the job itself". This is a situation in which teachers feel satisfied with their current work and how it is performed and monitored. The level of job satisfaction of teachers can be influenced by many factors such as opportunities to participate in decision-making, support of colleagues, support of managers, training opportunities and tension in the workplace (Maan et al, 2021). When an organization or educational institution hosts employees with a high level of pay, appropriate work nature supervision, and adequate promotion, this undoubtedly affects their level of job satisfaction and increases their intention to stay longer (Loan, 2020).). Also, satisfied employees provide excellent services and products (Alshebami, 2021). Ensuring the maximum level of satisfaction and the best use of available resources is always recommended, and therefore there is a need to allocate good work among employees based on their expertise (Altaweel, 2019). In addition, it further changes their behavior and guides them positively, and ultimately affects their well-being, organizational performance and innovative behavior (Olsson et al, 2020). The conducted research also shows the role of job satisfaction in employee innovation (Alshebami, 2021 Nikpour, 2018; Wei et al, 2020).

Organizational climate is one of the most important things related to the organizational environment, which is directly related to teachers' behavior. Since the late 1960s, organizational climate has been a common topic discussed in organizational behavior literature, and a critical perspective has been considered to understand employee work-related attitudes and behaviors (Olsson et al, 2020). Organizational climate is defined as the way employees perceive their organization and its goals (Song et al, 2020; Santoro, 2022). Churchill et al (1976) conceptualized organizational climate as a set of social variables that form the working environment of employees. According to Mullins (2010), if organizational culture is simply defined as "how things are done here", organizational climate can be defined as "the feeling of working here". Griffin & Moorhead (2014) explained organizational climate as an individual's perception of recurring patterns of employee behavior, attitudes, and emotions (Probst, 2015, Ehrhart et al, 2013). Organizational climate is considered as an important factor in the work environment that increases creativity and innovation (Hunter et al, 2020). According to (1994), Basadur (1997) and Schneider et al (1994), organizational climate is a useful basis for motivating creativity and innovation. Other researches also show the role of organizational climate in employee innovation (Shanker et al, 2017; Andersson et al, 2020; Ye et al, 2022).

Psychological capital, as an internal source of positivity, consisting of four components: self-efficacy, hope, resilience, and optimism, plays a fundamental role in increasing job satisfaction. Employees who have a high level of psychological capital generally experience greater job satisfaction due to their belief in their abilities to perform tasks (self-efficacy), ability to formulate goals and find alternative solutions to achieve them (hope), resistance to challenges and failures (resilience), and positive attitude towards future outcomes (optimism). This job satisfaction, when reinforced by psychological capital, helps to form a positive and dynamic organizational climate. In such an atmosphere, mutual trust, social support, and a spirit of cooperation are institutionalized, creating an environment in which employees feel secure and valued. This favorable organizational climate, in turn, provides the necessary platform for the emergence of innovative behavior; Because, under the support of the organization and relying on their individual psychological capital, individuals find more enthusiasm and courage to present new ideas, test novel solutions, and accept logical risks. Therefore, it can be seen how psychological capital and job satisfaction, by reinforcing each other and creating a constructive organizational climate, ultimately create a chain of positive effects, the outcome of which is the emergence and consolidation of innovative behavior in the organization.

All in all, innovation in a competitive world is essential not only for schools to grow, but also for their survival. New ideas and methods quickly replace previous methods and change has become a normal routine. Today's schools require rapid and continuous innovation in education, services, technologies and processes (Blickle et al, 2021). Due to rapid changes and fierce competition, schools have no choice but to innovate. Schools that cannot continuously introduce innovative education and services to the market are doomed to failure (Zhang et al, 2024). The question is, do Iranian schools have enough innovation? Looking at the state of public schools and education, we can see that the low level of innovation of teachers in the organization is a problem that affects most public schools and some non-government schools in Iran. Does the lack of innovation in schools jeopardize their successful performance? What conditions have caused innovation to lose its key role and function in the

schools of our country? What factor has caused innovation to be low in some schools? What factors are involved in the lack of innovation in schools? In order to survive in the changing and uncertain business environment of education and teaching in today's world, schools must be able to adapt to the increasing complexity and rapid changes. In such spaces, schools with high innovation capacity will be able to respond to environmental challenges faster and use new services and existing opportunities and technology better than non-innovative organizations. Therefore, due to the importance of teachers' innovation for education, especially public schools, identifying factors affecting it has become an important issue for most educational organizations. The review of the research background shows that so far no research has investigated the relationship between psychological capital, teachers' job satisfaction and organizational climate with teachers' innovative behaviors, especially in Iran. Therefore, the main purpose of this research is to answer these questions: Is there a relationship between psychological capital and teachers' innovative behaviors? Is there a relationship between job satisfaction and teachers' innovative behaviors? And is there a relationship between organizational climate and teachers' innovative behaviors? So that a step can be taken towards improving teachers' innovative behaviors. Therefore, the basic hypotheses of the present research are:

- There is a significant relationship between psychological capital and teachers' innovative behaviors;
- There is a significant relationship between job satisfaction and teachers' innovative behaviors;
- There is a significant relationship between organizational climate and teachers' innovative behaviors.

Theoretical Foundations and Empirical Background

Innovative behavior: Farr & Ford (1990) define the innovative behavior of employees as a personal behavior that aims to initiate and introduce new and useful ideas, processes, services or procedures in a work role, group or organization. Is. Innovative work behavior is different from employee creativity - the creation of new and useful ideas related to training, services, processes and procedures, because it also includes the implementation of ideas (Burks, 2020). Unlike creativity, innovative work behavior is clearly the desire to provide benefits. Creativity can be considered as a basic component of innovative work behavior at the beginning of the innovation process when problems or gaps in teaching and learning are identified and ideas are produced in response to the perceived need for innovation. , is more evident (Andersson, Moen & Brett, 2020).

The range of innovative behavior of employees is from minor and gradual improvements to the development of new fundamental ideas that affect processes or products throughout the organization (Nikpour, 2018). While the second mentioned type is very rare and of course only teachers who are active in the field of research and development of their educational activities are able to continue this behavior. The first type, small-scale improvements and suggestions, are more common and concern teachers in all areas. Examples of innovative work behavior include thinking about alternative teaching activities, searching for instructional improvements, devising new ways of doing activities and seeking new technologies, applying new methods, and reviewing and maintaining resources for Implementation is new ideas (Wei et al, 2020).

Usually, the innovative behavior of teachers is not part of the normal job of most teachers. Rather, it is defined as a behavior in addition to the role of individuals and it is referred to as an optional behavior that is not in the description of duties, while it is an effort for the benefit of the school and students (Andersson, 2020). The innovative behavior of teachers in the workplace is a complex behavior that includes three areas of idea generation, idea promotion, and idea implementation. Ideation and introduction deals with ideation and presentation of new ideas and shows the amount of production of new ideas. Promotion of ideas refers to the efforts of teachers to get the support and commitment of colleagues in the implementation of new ideas. Idea implementation refers to more practical efforts to transform new ideas into practical solutions and implement them in school work activities (Jain & Balu, 2018). Teachers' innovative behavior in the workplace is known as a dynamic and multidimensional process that manifests itself in three areas: idea generation, idea promotion, and idea implementation. In the idea generation stage, teachers, as agents of change, create novel solutions and creative strategies to solve educational challenges, which can include designing new teaching methods, developing creative educational content, or redefining learning processes. In the second step, namely idea promotion, teachers, by playing the role of facilitator

and propagandist, attract the support of various stakeholders, including administrators, colleagues, and parents, and provide the necessary platform for the acceptance of innovation by presenting well-reasoned proposals and forming supporting coalitions (Roudgarnezhad, 2023). Finally, in the idea implementation stage, teachers strive to implement innovation in the real educational environment by transforming theoretical ideas into practical actions, which requires careful planning, resource management, continuous monitoring, and flexibility in facing implementation challenges. These three areas, in dynamic interaction with each other, form the complete cycle of educational innovation, and success in each stage is a necessary condition for the effective realization of the next stage.

Psychological capital: According to Youssef (2017), psychological capital is a positive psychological development situation with the following characteristics:

1- Committing and making the necessary effort to succeed in challenging tasks and tasks (self-confidence/self-efficacy)
2- Persistence on the way to the goal and, if necessary, change the path to reach the goal in order to achieve success (hope).
3- Persistence when facing difficulties and problems to achieve success (resilience)
4- Having a positive statement about current and future successes (optimism)

Although these components may seem very similar and interchangeable from a lexical point of view, the literature of psychological capital and positivist organizational behavior has distinguished between the concepts, and empirical analyzes also indicate the existence of a significant difference between these concepts (Luthans & Youssef, 2017).
Psychological capital variables should have specific criteria of positive organizational behavior, which are:

1- Be based on research
2- It has the ability to measure variables
3- It is possible to develop and improve it
4- To have a positive effect on the job performance of employees
5- Be positive and be relatively unique in the field of organizational behavior (Liu, 2020).

According to this criterion, the potentials of positive organizational behavior are: self-efficacy, hope, resilience and optimism (Maas, et al, 2021). When these positive psychological structures are combined with each other, they form a high-level psychological structure that Luthans & Youssef (2017) refer to as psychological capital. Figure 1 shows the components of psychological capital.

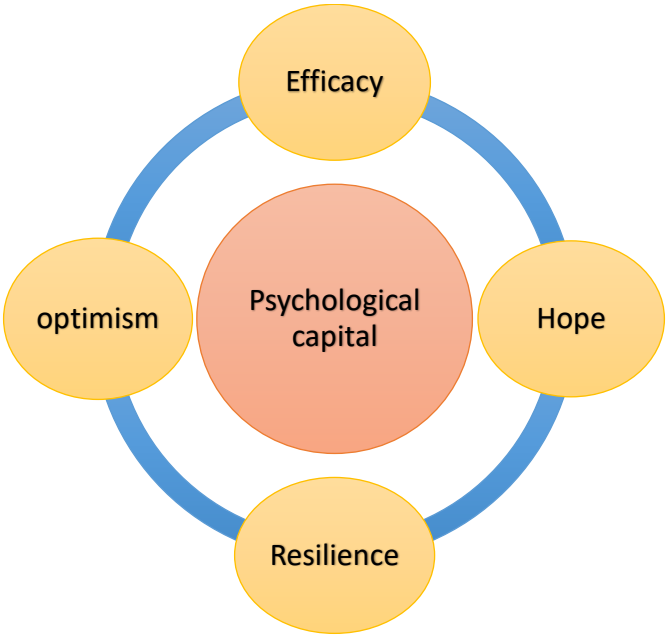

Figure 1: Components of psychological capital (Mohammadzadeh, 2022)

Psychological capital, which is a positive developmental state, is composed of four key interconnected components: hope, which means willful effort and finding solutions to achieve goals; optimism, which is a positive attribution towards present and future events and persistence in the face of obstacles; self-efficacy, which is an individual's confidence in mobilizing motivation and cognitive resources to successfully complete challenging tasks; and resilience, which is the ability to rise from adversity and failure and return to the original path or even reach a higher position (Han et al, 2022). In the activity of these four components, hope opens paths for moving forward, optimism gives energy and stability, self-efficacy creates the necessary confidence for action, and resilience enables one to overcome difficult inevitabilities (Mohammadzadeh, 2022).

Job satisfaction: Job satisfaction shows the way people feel about their work in general and its aspects (Wang, Hu & Dong, 2017). Cho & Lewis (2022) consider job satisfaction as a set of feelings and beliefs that people have about their current job. Each person has different levels of job satisfaction in each dimension. A person may be dissatisfied with salary and other material benefits, but satisfied with the supervision and nature of his work (Singh & Sarkar, 2019). The importance of job satisfaction is due to its relationship with other organizational outcomes such as absenteeism, organizational commitment, job turnover and performance. Considering the rapid impact of environmental changes on organizations and the formation of organizational changes, it is necessary to understand how to maintain employees, their commitment and job satisfaction. On the one hand, job satisfaction emphasizes the belief of employees from different aspects, and on the other hand, it emphasizes job dimensions such as satisfaction through communication, colleagues, appreciation, etc (Cho & Lewis, 2022). Table 1 shows the dimensions of job satisfaction:

Table 1: dimensions of job satisfaction

number	Dimension	Explanation
1	The nature of work	The range of tasks that employees perform and provides the opportunity to learn and accept responsibility.
2	Supervision	The technical and managerial abilities of supervisors and the considerations that supervisors show for the interests of employees.
3	salary	Amount of salary received, perceived equality regarding salary and payment methods.
4	Promotion opportunities	Access to real opportunities for advancement
5	Partners	The degree of friendliness, technical competence and support shown by colleagues

(Su et al, 2020).

Organizational climate: Organizational climate is based on employees' perception of their surroundings in the organization. will be evaluated. In simpler words, the organizational climate can be a group of characteristics inside and within the organization that affect the actions and activities of the members of the organization and can be a key element that distinguishes an organization or institution from others. separate other organizations and institutions (Chitpin, 2020). Therefore, although organizational climate is a very subjective concept, it can be evaluated and measured using tools. In the following, we will discuss a brief history of the formation of the organizational climate variable. (Ranjan et al, 2013). Table 2 presents different approaches to the formation of organizational climate:

Table 2: Different approaches regarding the formation of organizational climate

number	approach	Perspective
1	Structural approaches	This perspective basically considers the organizational atmosphere as characteristics related to the organization. These characteristics are related to the organization itself and independent of its members. This view refers to the relationship between the goal and the perceptual criteria of the organizational climate (Andersson et al, 2020)**.**
2	Perceptual approaches	This view considers the principle of the organizational climate to be the members of the organization themselves and is based on the assumption that organizational members interpret situational variables that are clearly psychologically meaningful to them and give them They answer**.**

3	Interactive approaches	The basis of this approach is that organizational climate is a product of communication between organizational members and organizational conditions (Blickle et al, 2021).
4	Cultural approaches	It is an evolved type of interactive perspective. According to this point of view, organizational groups create a common sense of the ideals, background, objectives and missions of the organization, which is the result of collective perceptions and interpretations of the members. The emphasis of this view is that groups include ideals, rules, information obtained from group and team agreement (Ye et al, 2022).

Organizational climate can be expressed in a simpler way: "Organizational climate is the employees' understanding of the environment in which they work". Organizational climate is a group of characteristics that describe an institution, institution or company and separate it from other institutions, it is not stable over time and affects the performance of people in the organization (Shau, 2017). The formation of organizational climate can be analyzed through several key approaches. The structural approach emphasizes the determining role of factors such as organizational structure, technology, policies, and physical space design in creating climate. In contrast, the perceptual-cognitive approach considers organizational climate to arise from employees' collective perceptions of the workplace, especially in their encounters with events, procedures, and managerial behaviors that are transformed into "meaning" through collective interpretation processes. The interactional approach also views the continuous interaction between employees' individual characteristics, leadership behaviors, and the organizational context as the origin of climate formation and emphasizes its dynamism and variability. Finally, the cultural approach considers climate as a manifestation of the organization's deeper culture—that is, shared patterns of values, beliefs, and basic assumptions—that give direction to the workplace, morale, and behaviors. In practice, these approaches complement each other and organizational climate is the result of a complex interaction between objective factors, subjective perceptions, social interactions, and the cultural context of the organization. Table 3 presents domestic and foreign research related to the research topic.

Table 3: A summary of related researches

Researcher/ Year	Title	Summary of Results
Roudgarnezhad (2023)	The relationship between innovative organizational climate and teachers' job performance with regard to the mediating role of innovative work behavior in technical and professional conservatories of Gilan province.	Innovative organizational climate has a positive and meaningful relationship with teachers' job performance and innovative work behavior. Innovative work behavior also has a positive and meaningful relationship with teachers' work performance. The relationship between innovative organizational climate and teachers' job performance has also been confirmed with regard to the mediating role of innovative work behavior.
Li, Huang & Chen (2022)	The relationship between the organization's service delivery atmosphere, job satisfaction and employees' desire to leave the service	The atmosphere of the organization's service provision has a positive effect on the job satisfaction and enthusiasm of employees, and job satisfaction reduces the desire to leave the service among employees.
Khosravi (2022)	The role of work enthusiasm in innovative behavior according to the mediation of psychological capital	The role of work enthusiasm in innovative behavior according to the mediation of psychological capital
Alehtaha & Akbari (2021)	The effect of psychological capital and the atmosphere of providing services to employees on the desire to leave the job, considering the mediating role of	The atmosphere of providing services and psychological capital has a positive and significant effect on job enthusiasm.

	enthusiasm and job satisfaction.	
Paul et al (2021)	The influence of the organization's environment and atmosphere on the adoption of innovation in the organization	The variables of organizational climate, organization size, weakness or lack of resources and age of the organization have a positive effect on the acceptance of innovation in the organization.
(2020) Tsaur, Hsu & Lin	The effect of psychological capital and attractive work environment on employees' job enthusiasm	Psychological capital and an attractive and entertaining work environment have a positive effect on the job enthusiasm of employees.
Omidvar et al (2021)	The relationship between organizational agility and innovative work behaviors with teachers' job satisfaction	Increasing organizational agility and innovative work behaviors help to increase teachers' job satisfaction.
Sonne (2019)	The relationship between leadership styles and organizational climate with creativity and innovation	The more suitable the leadership styles and organizational atmosphere are and supports the culture of creativity and innovation, the more innovative the organization will be.
Sameer (2018)	Psychological capital and innovative behavior	Psychological capital predicts innovative behavior
Hosseinipour & Seyedjavadin (2018)	The relationship between innovative organizational climate and its components with psychological empowerment in employees	There is a positive and significant correlation between innovative organizational climate and psychological empowerment.
Hsu & Chen (2017)	The relationship between organizational innovations and innovative behaviors and employee performance	Organizational innovations affect the innovative behaviors and performance of employees.
Zahidbablan & Seydkallan (2015)	The effect of perceived innovative organizational climate on creative self-efficacy and innovative behavior of student teachers	The effect of the atmosphere of innovative perception on creative self-efficacy and innovative behavior of student teachers is positive and significant.
Safarzadeh et al (2014)	The relationship between psychological capital and organizational commitment and teachers' job satisfaction	The findings showed a positive and significant relationship between psychological capital and organizational commitment and job satisfaction.
Leong & Rasli (2014)	The relationship between innovative work behavior and job performance	The innovative work behavior of employees has a positive and meaningful relationship with the work performance of employees.

Thien, Adams & Koh (2021) state that innovative behavior is doubly important for educational organizations; Because on the one hand, all the activities and the main operator of these organizations are in charge of human power, and on the other hand, all people are connected with this organization throughout their lives; Therefore, one of the most important factors in the long-term success and effectiveness of these organizations is the existence of a suitable atmosphere for innovation and the expression of innovative ideas for teachers. Today, the educational system needs changes and innovative behaviors to face the progressive challenges, unfortunately, Iranian schools are not innovative and their condition is not satisfactory due to the lack of necessary conditions and resistance to educational innovations. In this direction, researches, studies and plans are being carried out, all of which are trying to find methods and solutions to improve the innovative environment in schools and improve the performance of teachers and the overall performance of the educational system. According to the review of the studies, most of the researches have paid attention to only one of the variables in this research, and in some others, they have only investigated the role of moderator of the variable of innovative work behavior, and none of them have considered the role of mediator and moderator of behavior at the same time.

Innovative work has not investigated the relationship between innovative organizational climate and job performance. Based on this and considering the importance of the existence of an innovative atmosphere in conservatories and the innovative behavior of teachers that can lead to the education of creative and innovative students, and according to the reports of Roudgarnezhad (2023) which shows that an innovative organizational atmosphere It exists in a small number of schools in the country and most of the principals and teachers, in order to fulfill their job duties, show few innovative behaviors and have not performed very well (Jahanaray, 2019), the main question of the research is whether the capital Is there a relationship between psychological, job satisfaction of teachers and organizational atmosphere with innovative behaviors of teachers in public schools of Mahabad city?. Therefore, the basic hypotheses of the present research are:

- There is a significant relationship between psychological capital and teachers' innovative behaviors;
- There is a significant relationship between job satisfaction and teachers' innovative behaviors;
- There is a significant relationship between organizational climate and teachers' innovative behaviors.

Research Methodology

According to the nature of the research, which requires the measurement and detailed examination of the relationship between psychological capital, job satisfaction of employees and organizational climate with the innovative behaviors of employees, a quantitative approach has been used and it can be considered in terms of the purpose and nature of the research. considered in the category of applied research. The descriptive-correlation research implementation method is regression analysis type. The statistical population in this research includes all education workers and teachers of public schools in Mahabad city, the total number of the statistical population is about 3000 people. To determine the sample size, Cochran's formula was used:

$$n = \frac{3000\,(1/96)^2\,(0/5)^2}{3000\,(0/05)^2 + (1/96)^2\,(0/5)^2} = 341$$

Therefore, 341 public school teachers in Mahabad city were selected as the research sample. The sampling method in the present study was simple random sampling. In this study, the field method was used to collect information. The standard questionnaires Psychological Capital (Luthans et al, 2007), Job Satisfaction (Spector, 1985), Organizational Climate (Jao and Leo, 2009), and Employee Innovative Behavior (DeJong and Dan Hartog, 2008) were used as data collection tools. Among the different scales that exist in connection with the preparation of the questionnaire, the five-level Likert scale (1 to 5) was used, where the number one indicates the lowest score and the number five indicates the highest score. The numerical value of each option is 5, 4, 3, 2, 1, respectively. In this research, the content validity method was used to determine validity by using the opinions of professors and management experts.

Table 4: Dimensions of empowerment variable with its items number

Variable title	variable type	how to measure	the scale
psychological capital	Quantitative	5-option Likert scale	Luthans et al. (2007)
job satisfaction	Quantitative	5-option Likert scale	Spector (1985)
organizational climate	Quantitative	5-option Likert scale	Jao and Leo (2009)
Innovative behavior of quantitative employees	Quantitative	5-option Likert scale	DeJong and Dan Hartog (2008)

Cronbach's alpha test was used to measure the reliability of the questionnaires. As shown in the table below, the resulting value is from the number 7. is bigger, so it is clear that the relevant questionnaires have good reliability.

Table 5: Cronbach's Alpha Coefficients for Research Variables

Variable	Cronbach's alpha
psychological capital	0/88
job satisfaction	0/86
organizational climate	0/85
Innovative behavior of quantitative employees	0/90

In order to analyze the data, descriptive and inferential statistics were used. In the descriptive statistics section, central indices (median, mean and average) and dispersion indices (standard deviation and variance) were used. Step-by-step regression analysis was also used in the inferential statistics section. All the mentioned steps were done using Spss24 statistical program.

Findings

As stated in the method section, the research measurement tools had a five-level Likert scale (1 to 5), with one indicating the lowest score (completely disagree) and five indicating the highest score (completely agree), so the numerical value of each option is 5, 4, 3, 2, 1, respectively. Table 6 shows the descriptive statistics for the sample, including the mean and standard deviation for the variables examined in this study.

Table 6: Descriptive Indicators of Research Variables

Variables	Average	Standard deviation	lowest score	highest score	n
psychological capital	3	0/77	1	5	341
job satisfaction	3/06	0/92	1	5	341
organizational climate	3/12	0/82	1	5	341
Innovative behavior of quantitative employees	3/35	0/73	1	5	341

The results in Table 6 show that all standard deviations of all variables are less than 1, which indicates a small standard deviation of the data and that the data are normal. In order to check the normality of the data, skewness and elongation indices were used. The absolute value of skewness and skewness of the variables should not be more than 2 so that the assumption of normality of the data is established.

Table 7: Skewness and kurtosis tests to check the normality of research variables

Variables	skewness	Elongation
psychological capital	-0/068	0/097
job satisfaction	-0/421	-0/443
organizational climate	-0/124	0/208
Innovative behavior of quantitative employees	-0/416	0/307

As can be seen in table number 7, the absolute value of skewness and elongation of all variables is less than one. Therefore, the assumption of normality is maintained. Also, to further ensure the normality of the data, the Kolmogorov-Smirnov statistical test was used, the results of which are reported in Table 8.

Table 8: Result of Kolmogorov-Smirnov test for normality of score distribution

Variables	KS statistics	Significance level
psychological capital	0/684	0/539
job satisfaction	1/748	0/114
organizational climate	1/863	0/102
Innovative behavior of quantitative employees	0/874	0/443

Since the significance levels of the normality statistics are greater than 0.05 (P<0.05), the distribution of scores has a normal distribution. The results are reported in Table 5.

The first research hypothesis: There is a relationship between psychological capital and teachers' innovative behaviors.

Pearson correlation coefficient was used to examine the relationship between psychological capital variables and teachers' innovative behaviors. The obtained findings are listed in Table 9.

Table 9: Correlation coefficient of psychological capital and teachers' innovative behaviors

Variables	Innovative behaviors of teachers
psychological capital	0/61**
Hope	0/52**
optimism	0/48**
Resilience	0/55**
Efficacy	0/56**

P<0/01, * P<0/05**

As can be seen in Table 9, the correlation coefficient of psychological capital (r=0.61) and its components i.e. hope (r=0.52), optimism (r=0.48), resilience (r=0.55) And self-efficacy (r=0.56) with teachers' innovative behaviors is positive and significant at the level of 0.01. The results of Pearson's correlation coefficient between the research variables in Table 9 show that there is a positive and significant relationship between psychological capital and all components of teachers' innovative behaviors, and the correlation coefficient between all research variables is high, indicating a strong relationship between psychological capital and teachers' innovative behaviors. Therefore, the first hypothesis of the research is confirmed. (There is a significant relationship between psychological capital and teachers' innovative behaviors).

The second research hypothesis: There is a relationship between job satisfaction and teachers' innovative behaviors.

Pearson correlation coefficient was used to examine the relationship between teachers' job satisfaction variables and teachers' innovative behaviors. The obtained findings are listed in Table 10.

Table 10: Correlation coefficient of job satisfaction with teachers' innovative behaviors

Variables	Innovative behaviors of teachers
Job Satisfaction	0/51**
the payment	0/57**
Promotion opportunities	0/49**
supervisor	0/48**
Working conditions and job benefits	0/50**
Colleagues and agents of the work environment	0/43**

P<0/01, * P<0/05

As can be seen in Table 9, the correlation coefficient of job satisfaction (r=0.51) and its components i.e. pay (r=0.57), promotion opportunities (r=0.49), supervisor (r=0.48), Working conditions and job benefits (r=0.50) and colleagues and work environment factors (r=0.43) are positive and significant with teachers' innovative behaviors at the level of 0.01. The results of Pearson correlation coefficient between research variables in Table 10 show that there is a positive and significant relationship between job satisfaction and

all components of teachers' innovative behaviors, and the correlation coefficient between all research variables is high, indicating a strong relationship between job satisfaction and teachers' innovative behaviors. Therefore, the second hypothesis of the research is confirmed. (There is a significant relationship between job satisfaction and teachers' innovative behaviors).

Hypothesis three: There is a relationship between organizational climate and teachers' innovative behaviors.

Pearson's correlation coefficient was used to examine the relationship between organizational climate variables and employees' innovative behaviors. The obtained findings are listed in Table 11.

Table 11: Correlation coefficient of organizational climate with teachers' innovative behaviors

Variables	Innovative behaviors of teachers
Organizational atmosphere	0/46**
Group spirit	0/42**
Nuisance	0/42**
Intimacy	0/39**
disinterest	0/43**
Distancing	0/44**

P<0/01, * P<0/05

As can be seen in Table 11, the correlation coefficient of the organizational atmosphere (r=0.46) and its components, i.e. group spirit (r=0.42), annoyance (r=0.42), intimacy (r=0.39), interest (r=0.43), distancing (r=0.44), consideration (r=0.40), influence and dynamism (r=0.38) and emphasis on production (r=0.38) with innovative behaviors Teachers is positive and significant at the 0.01 level. The results of Pearson's correlation coefficient between the research variables in Table 11 show that there is a positive and significant relationship between organizational climate and all components of teachers' innovative behaviors, and the correlation coefficient between all research variables is high, indicating a strong relationship between the organizational climate and teachers' innovative work. Therefore, the third hypothesis of the research is confirmed. (There is a significant relationship between organizational climate and teachers' innovative behaviors).

Fourth hypothesis: psychological capital, job satisfaction and organizational climate are predictors of teachers' innovative behaviors.

In addition to the normality of the data, in order to perform regression analysis, it is necessary that the variances of the research variables are homogeneous, which was tested using the Levin test. Table (12) presents the results of the Levin test for examining the homogeneity of the research variables.

Table 12: Levine test to examine the homogeneity of research variables

Variables	Levine test	significance level
Psychological capital	1/239	0/931
Job satisfaction	2/654	0/651
Organizational climate	3/664	0/396
Innovative behaviors	2/885	0/830

Table 12 shows that the variances of the research variables are homogeneous (given the significance level at the 95% confidence level, which is greater than 0.050). Therefore, the homogeneity of the variables is confirmed.

Another prerequisite for conducting regression analysis is to examine the absence of multiple collinearity of the variables. To examine the absence of multiple collinearity of the variables, the variance inflation factor (VIF) and tolerance can be calculated. In such a way that an inflation factor above 5 and a tolerance below 0.1 indicate a critical inflation level.

Table 13: Variance inflation test to check for multiple noncollinearity

Variables	Inflation rate	Tolerance	dependent variable
Psychological capital	1/201	0/892	Innovative behaviors
Job satisfaction	1/110	0/973	
Organizational climate	1/002	0/992	

The results of Table (13) show that the variables have a variance inflation rate lower than 5 and a tolerance lower than 0.1. As a result, multiple collinearity is not observed between the independent variables.

Table 14 shows that the variances of the research variables are homogeneous (given the significance level at the 95% confidence level, which is greater than 0.050). Therefore, the homogeneity of the variables is confirmed.

Step by step regression analysis method was used to predict employees' innovative behaviors based on psychological capital, teachers' job satisfaction and organizational atmosphere. In order to predict teachers' innovative behaviors based on psychological capital, teachers' job satisfaction and organizational climate were entered into the equation in the first step of psychological capital, in the second step of organizational climate, and in the third step of job satisfaction. These three variables maintained their significance during three steps. Table 14 shows the results of regression analysis.

Table 14: The results of step-by-step regression analysis of teachers' innovative behaviors based on psychological capital, job satisfaction and organizational atmosphere

Imported variables	R	R^2	Adjusted R^2	R2Δ	F	df
Psychological capital	0/602	0/363	0/361	0/363	189/277**	1 ،335
Organizational atmosphere	0/666	0/445	0/440	0/082	48/492**	2 ،334
Job Satisfaction	0/690	0/467	0/471	0/033	19/995**	3 ،333

R represents the Pearson correlation between the independent variables and the dependent variable. The R2 coefficient represents the variance explained by the combination of independent variables. The adjusted R2 is a more conservative indicator of the explained variance. R2Δ also represents the contribution of each variable to predicting the dependent variable separately.

According to table 14; Psychological capital 36.3%, organizational atmosphere 2.8% and job satisfaction 3.3% predict the changes in teachers' innovative behaviors. In total, these variables are able to predict about 47.6% of the changes in teachers' innovative behaviors. The results of variance analysis in Table 14 show that psychological capital, organizational climate and job satisfaction have a significant effect on teachers' innovative behaviors.

Table 15: The results of step-by-step regression analysis of teachers' innovative behaviors based on psychological capital, job satisfaction and organizational climate

Entry order of variables	predictor variable	Non-standard coefficients B	The standard error	β Standard coefficients	t	The significance level
step one	Constant	1/708	0/126	-	13/650	0/001
	Psychological capital	0/556	0/05	0/603	13/759	0/001
The second step	Constant	1/282	0/133	-	9/706	0/001
	Psychological capital	0/462	0/05	0/45	11/487	0/001
	Organizational atmosphere	0/234	0/034	0/304	6/956	0/001
The third step	Constant	1/047	0/14	-	7/544	0/001
	Psychological capital	0/390	0/043	0/422	9/207	0/001
	Organizational atmosphere	0/20	0/034	0/259	5/930	0/001
	Job Satisfaction	0/178	0/05	0/206	4/427	0/001

coefficients in Table 15 show that psychological capital (0.422), organizational atmosphere (0.259) and job satisfaction (0.206) have a significant effect on teachers' innovative behaviors. According to the results obtained from the t coefficients; Psychological capital (9.207), organizational atmosphere (5.930) and

job satisfaction (4.472) have a significant effect on the innovative behaviors of teachers and have a significant contribution in predicting the innovative behaviors of employees. Therefore, according to coefficient (β=0.422) and t-statistic (t=9.207), psychological capital has a positive and significant role in predicting teachers' innovative behaviors. According to coefficient (β=0.259) and t-statistic (t=5.930), organizational climate has a positive and significant role in predicting teachers' innovative behaviors. According to coefficient (β=0.206) and t-statistic (t=4.472), job satisfaction has a positive and significant role in predicting teachers' innovative behaviors.

Discussion & Conclusions

Given the influential role of teachers in the excellence of the educational system and the necessity of innovation in the teaching and learning process, it is of particular importance to identify the variables that underlie their innovative behaviors. Today's organizations, especially the education organization, which plays an essential role in the development of society, needs teachers who have the necessary efficiency and effectiveness, and this is not possible unless the influential factors in this field are identified and strengthened (Sameer, 2018). One of the factors that play a role in the efficiency and effectiveness of people is their innovative behavior, that is, people show new work behaviors in the workplace so that they are seen as successful people. Many factors play a role in the emergence of innovative behavior of teachers, one of the important factors is psychological capital, organizational atmosphere and job satisfaction.

The results showed that the correlation coefficient of psychological capital and its components i.e. hope, optimism, resilience and self-efficacy with teachers' innovative behaviors is positive and significant. This finding is consistent with the research results of Khosravi (2022), (2021) Alehtaha & Akbari, Kumar et al (2022), Ye, Liu & Tan (2022) and Tsaur, Hsu & Lin (2020). In the explanation of this finding, it can be said that if the teachers investigate a long problem with confidence to find a solution, with complete confidence they can determine the tasks in collective work, participate in the basic discussions of their lives, life goals. determine themselves, be able to meet people outside to discuss issues and problems, be able to provide useful information to their colleagues with full confidence, and if they get stuck in training and a situation, they can find many ways to get out of it. find, pursue their career goals intensely, think that there are many methods for every problem, see themselves as the most successful person in their career, find many ways to achieve their current career goals, be able to Facing the career goals that they have determined for themselves and teachers looking at their careers as the best aspect of their lives leads to an increase in teachers' innovative behaviors. These results can be explained as follows: Psychological capital, as an internal resource consisting of the components of optimism, hope, self-efficacy, and resilience, provides a psychological foundation that empowers teachers to innovate. Teachers who have a higher level of this capital, due to their belief in their abilities (self-efficacy), perseverance in facing challenges (resilience), planning and striving to achieve goals (hope), and positive attitude towards work results (optimism), show greater motivation and courage to create new ideas, experiment with new teaching methods, and creative actions in the teaching-learning process. This finding, which is in line with previous research, emphasizes the key point that strengthening teachers' psychological resilience not only leads to improving their personal health, but also, as a strong motivator, paves the way for them to become agents of change and innovation in the educational system.

The results showed that the correlation coefficient of job satisfaction and its components, i.e. pay, promotion opportunities, supervisor, working conditions and job benefits, colleagues and work environment factors with teachers' innovative behaviors is positive and significant. This finding is consistent with the research results of (2021) Omidvar et al and (2021) Alehtaha & Akbari. Job satisfaction is basically an effective factor in employees' behavior, and for this reason, such a process is of interest to managers. Therefore, if teachers enjoy performing their job duties, are satisfied with the amount of salary they receive, their job makes them maintain their attention in performing their job duties, describe their job as a very interesting job, think that their job is completely enjoyable. department, when they do their job duties, they think about enjoying it, they believe in their abilities and skills to do their jobs and improve their performance, and they feel that they have the necessary freedom and discretion in making decisions for act in different situations, believe that their work has a significant influence on the strategic, administrative or operational consequences of the school and the success and effectiveness of education and teaching, and feel that they are pursuing important

or valuable career goals. Innovative will have more employees. People with high job satisfaction not only have a feeling of competence, but also a feeling of confidence that they are able to do things adequately. They feel personal superiority and believe that they can learn a way to face new challenges and grow. As a result, because they have the ability to deal with challenges and issues, they have more innovative behaviors. These results can be explained as follows: job satisfaction, as a positive emotional and cognitive state resulting from job evaluation and work experiences, provides a favorable psychological environment for the emergence of innovation. Satisfied teachers typically have greater emotional commitment to their school and students, have higher levels of energy and intrinsic motivation, and in an environment where they feel valued and psychologically secure, they show greater courage and willingness to break away from traditional methods, experiment with new teaching approaches, and invest in creative ideas. In contrast, dissatisfied teachers often suffer from burnout and apathy, and they suppress the psychological energy necessary to engage in innovation, which requires taking risks and spending additional mental resources. Therefore, job satisfaction not only acts as an intrinsic reward but also as a key motivator, leading teachers to become active and innovative agents in the teaching-learning process. The results showed that the correlation coefficient of the organizational climate and its components, i.e. group spirit, disturbance, intimacy, disinterest, distance, considerateness, influence and dynamism and emphasis on production with innovative behaviors of employees is positive and significant. This finding is consistent with the results of Roudgarnezhad (2022), Omidvar et al (2021), Hosseinipour & Seyedjavadin (2018), Zahidbablan & Seydkallan (2015), Li, Huang & Chen (2022), Paul et al (2021), Sonne (2019) and Hsu & Chen (2017) are consistent. In explaining this finding, it can be said that the organizational climate shapes the behavior of teachers in the organization and has a significant effect on the behavior of managers and teachers at all levels of the organization. Organizational climate strengthens the communication structure and coordination of the school and plays an effective role in creating innovative behaviors of teachers through the creation of work teams, coordination, solidarity between colleagues and learning network in effective teaching and training. Therefore, the issue of the climate of each organization should be taken into consideration along with other effective factors in teachers' innovative behaviors. Today, organizational climate is one of the most important concepts in the field of school management, which is referred to in various titles and ways in sources related to the behavior of educational organizations, and its description is based on the fact that it is closely related to some other effective factors in effectiveness. Teaching and educational innovations such as organizational culture, morale, motivation of teachers and also behavioral effectiveness of managers are very important. The concept of organizational climate implies the fact that human behavior in the organization is not only formed by interaction with direct and indirect events, but also under the influence of interaction with intangible and invisible organizational forces. In explaining this finding, it can be argued that when a school has a supportive, collaborative, and trust-based climate, teachers' sense of psychological security and belief in their own abilities are strengthened, and they are more enthusiastic about implementing new ideas in teaching and classroom management. Such an environment, in which creativity is appreciated, wise risk-taking is encouraged, and the necessary resources are provided to teachers, provides a fertile ground for the emergence and institutionalization of innovative behaviors. The alignment of this finding with previous research increases its validity and generalizability, and implicitly emphasizes the need for educational administrators to pay serious attention to building and strengthening a dynamic organizational climate as a powerful lever for encouraging innovation among teachers.

The results of the regression analysis showed that psychological capital, organizational climate and job satisfaction have a significant effect on the innovative behaviors of employees and are considered important predictors for the innovative behaviors of employees. This finding is consistent with the results of Khosravi (2022), Hosseinipour & Seyedjavadin (2018), Zahidbablan & Seydkallan (2015), Kumar et al (2022), Paul et al (2021), Tsaur Hsu & Lin (2020), (2019)) Sonne and Leong & Rasli (2014) is consistent. In explaining the role of psychological capital in predicting the innovative behavior of teachers, it can be said that psychological capital makes teachers believe that they can solve very complex problems effectively, trust in their creative abilities. Compared to their friends, they have a distinctive imagination and genius, most of the time, they have proven that they can deal with problematic situations, they are confident that they can face problems that require creative thinking. and perform well in providing

original solutions for class, education and teaching problems and as a result have more innovative behaviors.

In explaining the role of teachers' job satisfaction in predicting their innovative behaviors, it can be said that people's job satisfaction is one of the important factors in the success of individuals and organizations. To make teachers happy and satisfied, their living and working environment must be satisfactory. Job satisfaction provides a pleasurable emotional state that often leads to a positive work attitude (Wang, Chen & Zhu, 2021). In explaining the role of organizational climate in predicting teachers' innovative behaviors, it can be said that organizational climate is a relatively durable feature of a school that differentiates that school from other schools and includes collective perception manifested in factors such as independence, trust, and continuity. It is support, identity, recognition, innovation and neutrality and is created through interaction between members, it is used as a basis for interpreting the situation and it reflects the norms, values, perceptions and attitudes of the organizational culture of the school, as well as an effective source. And it works with influence to shape the behavior of teachers, managers and students. In an open and favorable atmosphere, teachers have significant job satisfaction and have enough motivation to overcome problems. They have the driving force necessary to organize the work and keep the school and class moving. In addition, teachers are proud to cooperate with their school. Teachers cooperate well with each other and do school affairs perfectly and as a result, they have more innovative behaviors in education, educational and learning services and their jobs.

Considering the role of psychological capital in the innovative behavior of teachers, it is suggested to the education managers and schools to welcome the challenges and make the necessary efforts to face them and achieve the educational and school goals through Achieving success and taking steps in this field to increase their belief in their ability, provide a constructive and positive atmosphere for increasing hope, and how to document positive events about success in the present and in the future for happiness. to be taught to have more vision and eyes to hope for the future; It is also suggested to them that the group morale will grow as a result of the feeling of doing the duty and satisfying the social needs. Do not impose, warm and friendly relations prevail in the organization, managers considering the opportunities for improvement and career development for teachers, providing learning opportunities, collaborative management, providing the necessary opportunities for teachers to make suggestions, support Innovative ideas, supporting teachers to acquire knowledge from external sources of the organization, encouraging teachers to share knowledge, supporting favorable decision-making and efficient evaluation of teachers will make them perform their duties based on commitment and personal interest, not The manager should try to help the teachers and do something for the teachers whenever he can. Innovative and innovative organizational climate in schools to create and maintain creative efforts can be effective in creating innovative behavior of teachers who will deal with teaching in classrooms, because the individual level of innovation, with the idea Creative activities start, then with new tasks or challenges that people find with their jobs, they do their work through innovative behavior in order to choose effective goals, and as a result, they will have a good job performance. Overall, the results of this study suggest that teachers' innovative behaviors as a driving force for change in the learning process are not a single-factor phenomenon but rather the result of a dynamic interaction of individual psychological factors and the organizational context. The findings clearly show that strengthening teachers' psychological capital, increasing their job satisfaction, and fostering a positive and supportive organizational climate are three essential pillars for the flourishing of innovation in educational environments. When teachers are psychologically empowered, satisfied with their jobs, and placed in an environment that values and encourages innovation, they demonstrate a greater willingness and ability to create, implement, and promote new educational solutions. Therefore, it can be concluded that investing simultaneously in teachers' personal development and improving organizational culture is not only a desirable measure, but also a strategic necessity for institutionalizing innovation and improving the quality of education in schools.

It is suggested to the future researchers that: Holding skill-building workshops to strengthen teachers' hope, optimism, resilience, and self-efficacy and creating opportunities for exchanging successful experiences; setting up teacher peer groups to share innovative experiences and receive constructive feedback from colleagues, including participating in personal learning groups; creating career advancement opportunities for teachers by encouraging continuous learning, providing financial and non-financial

incentives to creative teachers; using new approaches to teaching, such as the flipped classroom method or self-assessment, which increase a sense of job ownership and personal satisfaction; administrators and teachers can design the school and classroom environment in such a way that it is possible to freely express new ideas and experience failure without fear of judgment or blame. Providing this space is itself an important factor for the emergence of innovative behaviors in teachers and paves the way for experimenting and testing new methods.

This study was conducted only among teachers in Mahabad city. Therefore, the generalizability of the results to teachers in other regions with different cultural, social, and economic contexts should be done with caution. The data in this study were collected mainly through self-report questionnaires, which can lead to bias. Questionnaires are not able to fully capture the complexities of innovative behavior in the real classroom environment. The use of qualitative methods (e.g., observation, interview) or objective data (e.g., number of innovative projects implemented) could have revealed other dimensions of innovation. This study was conducted at a specific point in time. Other important variables such as the leadership style of the school principal, the experience of the teachers, the grade they teach, the level of family support, or demographic factors (e.g., age and gender) may have influenced the relationships between the main research variables that were not controlled for in this model.

According to the results of the study, it can be suggested to future researchers: It is recommended that this study be repeated in non-government schools, other affluent and less affluent areas, and at different educational levels to ensure the generalizability of the results. It is suggested that the relationship between these variables be examined comparative among teachers with different work backgrounds (young, experienced) and also based on gender. Considering the direct effect of independent variables on innovation, it is suggested that the mediating role of variables such as "intrinsic motivation", "organizational commitment" and "professional self-efficacy" in the relationship between psychological capital and job satisfaction with innovative behaviors be examined in future studies. It is suggested that the effect of these variables be examined at different levels (individual level: teacher; group level: educational groups; organizational level: school) using multilevel structural equation modeling. This work can determine the contribution of each level in explaining innovation more precisely. It is suggested that the role of "transformational leadership style" of school principals be explored as an independent or moderating variable in the relationship between organizational climate and teachers' innovative behaviors. Investigating the effect of "knowledge management" in schools and "organizational learning" on strengthening teachers' innovative behaviors can pave the way for future research. Given the necessity of digital transformation in education, it is suggested that the relationship between "teachers' digital literacy" and "attitudes toward educational technologies" with their innovative behaviors be studied. Using a mixed research method (quantitative and qualitative) can greatly contribute to both the generalizability of the results and the discovery of hidden layers of the problem.

Resources

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