DOI 10.47176/sjamao.6.3.7

SRPH

Original Article

SJAMAO, 2024;6(3):7-13

Investigating the effect of environmental scanning on organizational resilience with the mediating role of organizational learning and innovation in the process (case study: social security organization of Mashhad)

Hoda Baradaran Rouhani[1], Solmaz Elhami[2]*

[1] Master's student of Tabaran Institute of Higher Education, Mashhad, Iran.
[2] Assistant Professor, Tabaran Institute of Higher Education, Mashhad, Iran.

***Corresponding Author:**

elhami@tabaran.ac.ir

Received: 12 May, 2024
Revised: 20 August, 2024
Accepted: 15 Sepetember, 2024
Published: 20 September 2024

ABSTRACT

Resilience in times of crisis and turmoil is a key factor for the success of organizations because it allows them to adapt to different types of disruption, from adverse events to global crises. In this regard, the current research was conducted with a quantitative approach and with the aim of investigating the effect of environmental scanning on organizational resilience with the mediating role of organizational learning and innovation in the process. The research is applied in terms of purpose and descriptive-correlational in nature based on structural equations. Research information and data have been collected by documentary and field methods, and the main tool for collecting research findings has been standard questionnaires. The statistical population of the research is all the employees of the Social Security organization of Mashhad; 800 people and 260 people have been selected as the sample size based on the Chrissy and Morgan table. The random sampling method is stratified (proportional allocation). The validity of the measuring instrument (questionnaire) has been calculated and confirmed through face and convergent validity, and the reliability of the measuring instrument is confirmed by Cronbach's alpha coefficient and composite reliability. Regression analysis and the Sobel test were used to test research hypotheses using SPSS26 and Smart-PLS software. The research findings show that, at the confidence level (0.95), environmental scanning, organizational learning, and innovation in the process have a significant and positive effect on organizational resilience. Also, self-efficacy and environmental scanning significantly positively affect organizational learning and innovation in the process. Organizational learning and process innovation mediate the effect of environmental scanning on organizational resilience.

Keywords: organizational resilience, environmental scanning, organizational learning and process innovation.

Introduction

In today's unpredictable and uncertain times, organizations face unforeseen events such as natural disasters, financial problems, lack of resources, etc[1]. In this regard, the social security organization is not exempted from this due to the large number of members it provides services to. Organizations can survive through resistance, absorption, and response to destructive events through organizational resilience [2]. Organizational resilience refers to the essential ability of an organization to resist the involvement of multiple hazards and realize survival in a turbulent and changing environment, helping to effectively manage unexpected events, recover from crises, and promote future success [3].

Recent research shows resilience is of great concern during crises when individuals and organizations are unstable [4]. Researchers have begun to focus their research on ways to promote organizational resilience. In contrast, a review of the literature on resilience shows that public organizations pay less attention to organizational resilience, and larger private companies

Publisher: Scientific Research Publishing House (SRPH), Shirvan, Iran
http://srpub.org
Email: sjamao@srpub.org

pay paid [2]. Even though various factors may influence the development of resilience in government organizations, these factors have not been given much attention [5].

In this regard, environmental scanning provides managers with information about technology, developments, government laws and regulations, customer needs, and financial resources provision conditions [6]. Environmental scanning is one of the methods of strategic foresight whose purpose is to identify, understand, evaluate and prioritize responses to environmental issues and changes [7]. Organizational learning can help to understand organizational resilience. Nothing is more important to strengthen resilience than having an updated workforce to face any threat [8]. Maity [9] confirm this view and say that employee knowledge through professional training and development opportunities is essential in creating an organization's resilience culture. In this regard, organizational learning is a known process in which an organization continuously tries to change or redesign itself to adapt to a constantly changing environment [3].

Innovation is critical to the long-term success and growth of most organizations. The process of change that occurs through innovation is important for organizations because it involves updating existing service delivery models [10]. Process innovation is essential to the overall ability to innovate because an organization's capacity to acquire its resources and capabilities, and most importantly, the ability to recombine and renew its resources and capabilities to meet creative production needs, is critical to its success [11]. In general, the development of knowledge capabilities can lead to the development of new processes. That is why organizations started focusing on environmental scanning to obtain the necessary information for innovation. Environmental scanning enables them to be alert and sensitive to ecological changes and identify and use innovation opportunities. It makes it more accessible [12].

A large amount of theoretical and experimental research has identified factors that are influential or related to organizational resilience. In this regard, a very small number of researchers have also investigated the effect of environmental scanning. Organizational learning and process innovation have been discussed as a supporting factor in adapting to risky situations. In this regard, the present study examines the role of these factors as supporting and related factors in the resilience of employees of the Social Security Organization of Mashhad. No study has attempted to examine the relationship between environmental scanning and organizational resilience by mediating organizational learning and process innovation. Therefore, due to the lack of necessary research in this regard, such research is felt to be needed to examine and analyze all aspects of the subject scientifically, explain the relationship of these important variables to each other, and provide the possibility of comparing the existing situation and the desired situation. Also, in this research, solutions and suggestions are presented according to the research findings for the planning and decision of the Social Security Organization of Mashhad managers. In this regard, the present research answered the following central question:

Does environmental scanning affect organizational resilience, with the mediating role of organizational learning and innovation in the Social Security Organization of Mashhad process?

Method

Since the current research aims to "investigate the effect of environmental scanning on organizational resilience with the mediating role of organizational learning and innovation in the process in the social security organization of Mashhad", its findings will present solutions for decision-making and future planning. Be used; therefore, the type of this research is considered to be applied in terms of its purpose. In terms of its nature, the present research is classified as descriptive-survey research of the correlation type based on structural equations. Because it describes the state of the variables as well as the relationships between them and uses regression analysis to test and explain the simultaneous relationships between the variables, based on this, the statistical population of the research is 800 employees of the Social Security Organization of Mashhad. Chrissy and Morgan's table was used to determine the sample size. Based on this table, the number of samples for the statistical population of the research is estimated to be 260 people.

According to the study population's structure, the stratified random sampling method (proportional allocation) was used to select the sample. To select a sample, it should be done in the following order:

1- The distinguishing feature of the people of the statistical population has been determined (the place of service in the Social Security Organization of Mashhad).

2- The statistical population is classified based on the target trait.

3- The distribution table of people of the statistical population in each class is specified.

4- The percentage ratio and share of each class in the total population of the statistical community has been determined.

5- According to the share of each class in the statistical population, the ratio of the percentage and share of that class in the sample volume has been determined.

6- Using the simple random sampling method, the number of sample people of each class has been selected from all the people of the same class.

In order to carry out the current research, two main methods, field, and documentary, have been used. In the documentary method, all kinds of books, magazines, research reports, English and Persian articles, and theses related to the research topic have been used in the

[DOI: â€Ž 10.47176/sjamao.6.3.7]

libraries of the scientific and research centres of the country. A questionnaire was used to collect data in the field section. In order to collect the required data, four localized standard questionnaires (environmental survey, organizational resilience, organizational learning, process innovation) have been used as described in Table 1.

Table 1: **Questionnaire name according to dimensions, item number and related spectrum**

questionnaire	Author/year	Number of questions	Spectrum
Environmental scanning	(Yahya Marzouk & Jin, 2023)	1-4	I completely agree. I agree I have no opinion I disagree I completely disagree
Organizational resilience	Conroe and Davidson (2017)	5-10	
Organizational learning	Chiva et al (2019)	11-16	
Innovation in process	Wang and Ahmed (2020)	17-20	

According to the required sample size, the researcher referred to 260 people (calculated based on the sample size) from the employees of the Social Security Organization of Mashhad based on the branches mentioned in Table 1 and during the planning, regarding the description and distribution of the questionnaires and then They were completed by the respondents themselves. After the completion stage, the collected questionnaires were reviewed and coded, and then the information from the questionnaires was entered into the statistical software. After entering the information and forming the data bank, the analysis and processing of the collected data was done, and the descriptive and inferential statistics methods of the descriptive research variables and hypotheses were explained with appropriate statistical tests.

Descriptive statistics and inferential statistics methods are used to analyze the data, and the statistical methods and techniques used in this research are summarized below. In order to describe the data and observations after collecting, reviewing, coding, entering information, and forming an information bank in SPSS26 software, statistical description methods such as frequency distribution tables such as mean, standard deviation, variance, minimum, and maximum are used. In the statistical inferences section, after changing the research variables from ordinal scale to interval scale, confirmatory factor analysis tests, t significance coefficients, adjusted coefficient of determination, path analysis, hierarchical regression analysis using SPSS26 software, and structural equations using Smart-Pls software were used.

Findings

With the descriptive statistics method (abundance, frequency percentage, mean, standard deviation, tables, and graphs), the research's background variables and main variables have been described. Among the respondents who participated in this study, there were 159 men with a frequency of 61.2% and 101 women with a frequency of 38.8%. Twenty-seven people with a frequency of 10.4% in the age range of 20 to 30 years, 95 people with a frequency of 36.5% in the age range of 40 to 31 years, 120 people with a frequency of 46.2% in the age range of 41 to 50 years and 18 people with a frequency of 6.9 percent are in the age range of 51 to 60 years. The average age of the respondents is 42 years. Eighteen people, with a frequency of 6.9%, have a diploma education; 36 people, with a frequency of 13.8%, have a postgraduate education; 132 people, with a frequency of 50.8%, have a bachelor's education; and 74 people, with a frequency of 28.5%, have a postgraduate education and above. Forty-five people, with a frequency of 17.3%, have 1 to 10 years of service; 81 people, with a frequency of 31.2%, have 11 to 20 years, and 134 people have a frequency of 21 to 30 years, with a frequency of 51.5%. The average service experience of the respondents is 19 years.

In Chart 1, the path coefficients show the degree of relationship between the variables in the research model. From the coefficients of the path, this conclusion is made about how much correlation exists between the research variables. These coefficients are a kind of indicator of the correlation between the variables considered in the research. The closer the path coefficient is to one, the more appropriate the factor is in explaining the dependent variable. According to the path coefficients of the research model, it can be said that the desired variables in the research model have strong explanatory power.

[DOI: â€Ž 10.47176/sjamao.6.3.7]

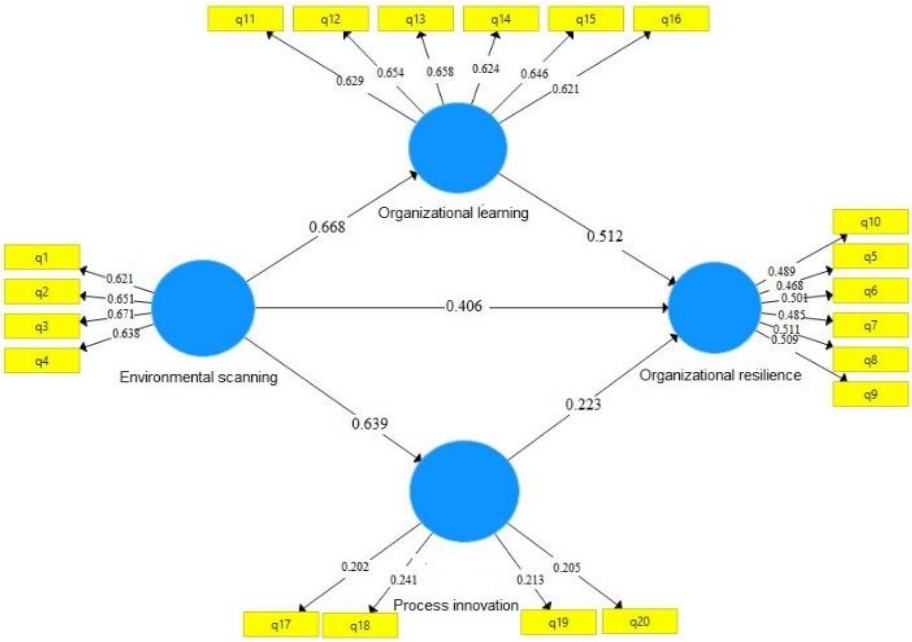

Chart 1: **Path coefficients**

Table 2: **results of path analysis of research variables**

path	standardized path coefficient	standard deviation	T-Value	P-value	results
Environmental scanning Organizational resilience	0.406	0.056	7.121	0.000	**confirmation**
Organizational learning Organizational resilience	0.514	0.050	9.653	0.000	**confirmation**
Innovation in process Organizational resilience	0.223	0.032	3.679	0.000	**confirmation**
Environmental scanning Organizational learning	0.668	0.048	14.1435	0.000	**confirmation**
Environmental scanning Innovation in process	0.639	0.088	13.347	0.000	**confirmation**

In the study of the effects of environmental monitoring variables on organizational resilience, organizational learning on organizational resilience, process innovation on organizational resilience, environmental monitoring on organizational learning, and environmental monitoring on organizational innovation, the results are shown in Table 2. We can see that the path coefficient is significant at a 95% confidence level and 5% error. Environmental monitoring has a significant positive effect on organizational resilience, and about 41% of changes in the dependent variable of organizational resilience are explained by environmental monitoring. Organizational learning significantly positively affects organizational resilience, and about 51% of changes in the dependent variable of organizational resilience are explained by organizational learning. Process innovation has a significant positive effect on organizational resilience, and about 22% of changes in the dependent variable of organizational resilience are explained by process innovation. Environmental scanning has a significant positive effect on organizational learning, and about 67% of changes in the dependent variable of organizational learning are explained by environmental scanning. Environmental scanning has a significant positive effect on innovation in the process, and about 64% of changes in the dependent variable of process innovation are explained by environmental scanning.

[DOI: â€Ž 10.47176/sjamao.6.3.7]

Table 3. **results of the path analysis at the significance level of p**

Component	path coefficient	significance level	standard error	result
Environmental scanning Organizational learning	0.668	0.000	0.048	**confirmation**
Organizational learning Organizational resilience	0.514	0.000	0.050	**confirmation**
Environmental scanning Organizational learning Organizational resilience	0.519	0.000	0.008	**confirmation**
Environmental scanning Innovation in process	0.639	0.000	0.08	**confirmation**
Innovation in process Organizational resilience	0.223	0.000	0.032	**confirmation**
Environmental scanning Innovation in process Organizational resilience	0.332	0.000	0.007	**confirmation**

Also, the results of Table 3 show that environmental scanning has a significant positive effect on organizational learning at the 95% confidence level, and the intensity of this effect is equal to (0.668). That is, with the increase of environmental scanning, the level of organizational resilience also increases. Environmental scanning has a positive significant effect on process innovation at the 95% confidence level, and the intensity of this effect is equal to (0.639). That is, with the increase in environmental scanning, the amount of innovation in the process also increases. The mediating variable of innovation in the process has a significant positive effect on organizational resilience at the 95% confidence level, and the intensity of this effect is equal to (0.223). That is, by increasing the amount of innovation in the process, the amount of organizational resilience also increases. Also, environmental scanning has a significant positive effect on organizational resilience at the 95% confidence level, and the intensity of this effect is equal to (0.406). That is, with the increase of environmental scanning, the level of organizational resilience also increases. Considering that the significance level of all relationships is less than 0.05, it can be concluded that innovation in the process mediates the impact of environmental dynamics on organizational resilience, and the research hypothesis is confirmed.

Conclusion

The purpose of this research is to investigate the effect of environmental scanning on organizational resilience with the mediating role of organizational learning and innovation in the process. The inferential results of the research showed that environmental scanning, organizational learning and process innovation have a significant positive impact on organizational resilience. Organizational learning and innovation in the process mediate the impact of environmental scanning on organizational resilience. Also, the descriptive results of the research show that the level of organizational resilience, environmental scanning, organizational learning and innovation in the process in the social security organization is high, which shows the favorable status of these variables in this organization. In general, the results of this research with the results of Sajjadi et al. [7]; Farrokh Shahinia et al. [13]; Lal et al.[14]; Yarahamdi Khorasani et al. [15]; Varamini et al. [16]; Tomini et al. [2]; Retkowsky et al. [17]; Liu et al. [3] is consistent.

As environmental scanning is often used to identify and understand certainties in the organization, this forecasting method is likely to allow organizations to identify resources in new ways and act in a timely manner in response to changes. An organization needs information about current trends and developments, which, as a result, can learn and enable a rapid adaptation

[DOI: â€Ž 10.47176/sjamao.6.3.7]

of relevant strategies [9]. Environmental scanning provides information that helps to adapt relevant strategies quickly. This is the main purpose of environmental scanning, identification of destructive developments in the early stage and adaptation of research and development. Therefore, it becomes possible to identify the necessary adjustments to an organization's strategy or business development [2].

In addition, both organizational learning and organizational resilience are knowledge and information stored, shared and used by employees as motivation for them to focus their attention on the external environment, develop a shared vision. and seek goals and improve organizational performance [2]. Liu et al. [3], found that organizational learning is among the factors that have a positive effect on organizational resilience. Also, as much as the amount of environmental scanning increases, the amount of organizational learning also increases and vice versa. Environmental scanning is a process for acquisition and learning. Environmental scanning monitors the environment and provides data to the manager along with its interpretation and learning which includes a new response or action based on the interpretation. Based on this process, it is clear that environmental scanning is a prerequisite for learning. Studies show that environmental scanning improves learning and organizational performance. Organizations use environmental scanning to detect changes or events in the environment that may affect them, and then learn by turning this information into knowledge. Most importantly, environmental scanning allows organizations to adapt to changes and change their internal processes and strategies quickly and in time [18]. Organizations that spend their time scanning the environment and learning from their environment are more successful. Organizations that learn from the external environment can adjust their resources and processes for sustainable competitive advantage. According to their previous disorder experiences and actively develop resilience capabilities [19]. In general, it is important to understand organizational resilience as a continuous process that includes external factors as well as organizational design and coherently links operational units to their monitoring, coordination, communication and accountability mechanisms at all levels to deal with dynamic conditions [20]. In this regard, environmental scanning is a method to deal with external factors through information collection. While innovation is the process responsible for changing or renewing internal organizational design based on information gathered through environmental scanning to ultimately increase organizational resilience. Resilient organizations leverage their knowledge of their environments to implement changes in internal processes and ways of doing things to ultimately create resilience [21]. An organization's ability to process knowledge and incorporate it into its dynamics with the goal of regulating behavior and improving its performance is a way to build resilience.

All researches face limitations at the time of implementation, variables not related to the research topic in the organization environment (management style, spirituality in the work environment, quality of work life, job stress, salary and job benefits) that may have affected this relationship. have its own effect, which has not been measured due to being outside the research field of the researcher. In the implementation of this research, many factors and variables such as the needs, interests, personality characteristics of employees and their cultural, social and political views, the existing rules and regulations of the culture governing the organization and society can be influential, which are beyond the control of the researcher. have not been Considering the limitations of the research, researchers are advised to repeat such research in other organizations and statistical society with a different and larger sample. Also, in their research, examine the role of variables (management style, spirituality in the workplace, quality of work life, job stress, salary and job benefits) as moderating variables in the relationship between environmental dynamics and organizational resilience. In general, it is suggested that managers of social security organizations create information processing capabilities along with environmental scanning to identify, collect and analyze information that is related to the development of innovation and resilience capabilities.

References

1.Duchek, S. "*Organizational resilience: a capability-based conceptualization,"* Business Research, Vol. 13 No. 1, pp. 215–246.2020.

2. Tomini, L., Gibril, S., & Bochev, V. Standing up against autocratization across political regimes: a comparative analysis of resistance actors and strategies. *Democratization*. 2023. 30(1), 119-138.

3. Liu, Y., Chen, R., Zhou, F., Zhang, S. and Wang, J. "Analysis of the influencing factors of organizational resilience in the ISM framework: an exploratory study based on multiple cases", Sustainability, Vol. 13 No. 23, p. 13492.2021.

4.Omidvar, O., Safavi, M., & Glaser, V. L. Algorithmic routines and dynamic inertia: How organizations avoid adapting to changes in the environment. *Journal of Management Studies,* 2023. 60(2), 313-345.

5.Saad, M.H., Hagelaar, G., Van Der Velde, G. and Omta, S.W.F. "Conceptualization of SMEs' business resilience: a systematica literature review", Cogent Business and Management, Vol. 8, p. 2021. 1938347, doi: 10.1080/23311975.2021.1938347.

6.Yu, W., Chavez, R., Jacobs, M., Wong, C.Y. & Yuan, C. "Environmental scanning, supply chain integration, responsiveness, and operational performance: an integrative framework from an organizational

[DOI: â€Ž 10.47176/sjamao.6.3.7]

information processing theory perspective", International Journal of Operations and Production Management, Vol. 39 No. 5, pp. 787–814.2019.
7.Sajadi, J; Shiroviapour, Sh & Fazli, S. Environmental survey of Iran's tobacco industry: the first step in the process of strategic foresight. *Journal of future studies of the Islamic revolution*. 2019. 4 (2). 124-97.
8.Hiles, A. *The Definitive Handbook of Business Continuity Management*, Wiley, Chichester. 2011.
9.Maity, S. Identifying opportunities for artificial intelligence in the evolution of training and development practices. *Journal of Management Development*, 2019. 38(8), 651-663.
10.Awan, U., and Sroufe, R. Sustainability in the circular economy: Insights and dynamics of designing circular business models. *Appl. Sci.* 2022.12 (3), 1521. doi:10. 3390/app12031521.
11.Wang, C., L., and Ahmed, P., K. The development and validation of the organisational innovativeness construct using confirmatory factor analysis. Eur. *J. Innovation Manag.*2020. 7 (4), 303–313. doi:10.1108/14601060410565056.
12.Grimpe, C., and Sofka, W. Search patterns and absorptive capacity: Low and high technology sectors in European countries. *Res. Policy*.2009. 38 (3), 495–506. doi:10.1016/j.respol.2008.10.006.
13. Farrokh Shahinia, R; Shirvani Naghani, M & Hemmati Afif, A. Environmental scanning of the four dimensions of Iranian sports based on strategic foresight and analysis of consequences using the future wheel method. *Strategic Management Research Quarterly*. 2022. 85 (28). 154–121.
14.Lal Kazemian, E & Jafari Titkanlou, S. The effect of strategic change on organizational performance according to the mediating role of organizational learning and the moderating effect of environmental dynamics. *Strategic Management Studies Quarterly*.2021. 13 (50). 175-199.
15.Yarahamdi Khorasani, A; Ghorbani, M & Faribarzi, E. Designing a model for promoting organizational innovation capabilities with an organizational resilience approach in knowledge-based companies.2020. 12 (4). 52-69.
16.Varamini, N; Rizwanfar, A & Mohd Mohammadi, S H. Analysis of competitiveness in agricultural cooperatives: the role of organizational learning and organizational innovation in agricultural cooperatives of Tehran province. 2019. 11(2). 349-332.
17.Retkowsky, J., Nijs, S., Akkermans, J., Khapova, S., & Jansen, P. Seeking stability in unstable employment: An exploratory study of temporary agency workers' career self-management. *Journal of Vocational Behavior*, 2023. 143, 103877.
18.Tang, T. W. Becoming an ambidextrous hotel: The role of customer orientation. *Int. J. Hosp. Manag.* 2014. 39 (110), 1–10. doi:10.1016/j.ijhm.2014.01.008.
19.Battistelli, A., Galletta, M., Portoghese, I., & Vandenberghe, C. Mindsets of commitment and motivation: Interrelationships and contribution to work outcomes. *Journal of Psychology*, 2020. 147, 17–48.
20.Sanjay Kumar S., Alice M., Saeedeh RV. Knowledge-based HRM practices and innovation performance: Role of social capital and knowledge sharing. *Journal of International Management*.2021. 27(1), 100830.
21.Garcia-Morales, V. J., Lorens-Montes, F. J., and Verdu-Jover, A. J. Antecedents and consequences of organizational innovation and organizational learning in entrepreneurship. Industrial Manag. *Data Syst.* 2017. 106 (1), 21–42. doi:10. 1108/02635570610642940

.

SJAMAO

Citation: Baradaran Rouhani H, Elhami S. Investigating the effect of environmental scanning on organizational resilience with the mediating role of organizational learning and innovation in the process (case study: social security organization of Mashhad). SJAMAO, 2024.;6(3):7-13

https://doi.org/10.47176/sjamao.6.3.7

[DOI: â€Ž 10.47176/sjamao.6.3.7]