

THE EFFECT OF OPEN INNOVATION MINDSET ON ABSORPTIVE CAPACITY: THE MEDIATION ROLE OF ENTREPRENEURIAL ALERTNESS

DOI: 10.17261/Pressacademia.2022.1652

JMML- V.9-ISS.4-2022(2)-p.147-155

Nader Salehi¹, Mohammad Mehdi Asrar²

¹Islamic Azad University, Department of Management, E-Branch, Tehran, Iran.

ndsalehi@gmail.com, ORCID: 0000-0001-5424-1801

²Islamic Azad University, Department of Management, E-Branch, Tehran, Iran.

mm.asrar@gmail.com, ORCID: 0000-0002-7018-0655

Date Received: October 3, 2022

Date Accepted: December 7, 2022

OPEN ACCESS



To cite this document

Salehi, N., Asrar, M., (2022). The effect of open innovation mindset on absorptive capacity: the mediation role of entrepreneurial alertness. *Journal of Management, Marketing and Logistics (JMML)*, 9(49), 147-155.

Permanent link to this document: <http://doi.org/10.17261/Pressacademia.2022.1652>

Copyright: Published by PressAcademia and limited licensed re-use rights only.

ABSTRACT

Purpose- Applying new information across corporate borders is a strategy for innovation that uses absorptive capacity. In organizational research, the term open mindset is used to define a firm's ability to understand and accept new concepts or to critically evaluate its experience with new knowledge. The shift inflow or outflow initiative and notion advocated for this tactic. Applying opportunities for creation through innovation is the action of the entrepreneurial attentiveness. An evaluation of a firm's intelligence results from assessing the open mindset of individuals who perceive, evaluate, and seize new chances in contact with the environment. The purpose of this research is to investigate the impact of an open innovation mindset on the absorption capacity in small and medium-sized enterprises with the mediating role of entrepreneurial alertness.

Methodology- The statistical population includes 430 managers of small and medium-sized businesses producing industrial, utility, and construction pumps. The sample size is 131 firm managers. In this research, the data collection tool is a questionnaire that has been distributed and collected using a non-probability sampling method. The validity and reliability of the questionnaire were evaluated during the pre-test. Smart PLS and SPSS software were also used to analyze the research data.

Findings- Descriptive and inferential analysis have both been used in this study. The result of data analysis shows that open innovation has a significant effect on entrepreneurial alertness. It can also be mentioned that the impact of the open innovation mindset on absorptive capacity.

Conclusion- The findings show that the open innovation mindset at the individual level increases the firm's absorptive capacity. Also, entrepreneurial alertness plays a mediating role between the impact of an open innovation mindset and absorptive capacity. The findings thus demonstrate that those who pay attention and have an open and interactive mindset while receiving opportunities and suggestions are more likely to succeed.

Keywords: Open innovation mindset, entrepreneurial alertness, absorptive capacity

JEL Codes: M30, M21

1. INTRODUCTION

According to Drucker (2002), innovation is a crucial component of small, medium, and large businesses' competitive strategies. These businesses must engage in creative activities due to the market competition they face (Porter, 1980). Knowledge, according to Bloodgood (2007), is the foundation of competitive advantage. The essential element that affects economic growth is knowledge (Qiao and Chen, 2010). In today's knowledge-intensive economy, businesses that are proficient at obtaining and utilizing knowledge will flourish (Sharabati and Thiruchelvam, 2009). In a dynamic world where businesses must adapt, new external knowledge is a vital resource for survival and competition, improving the inventiveness of their products (Cohen and Levinthal, 1990; Nonaka, 1994; Gray, 2006; Lee and Choi, 2010).

The interaction created by the exchange of information for innovation and supplying a new firm model is crucial in today's industry. Every product and business model has an independent life cycle (Herrmann, 2006). Thus, the firm needs to get ready for the new paradigm in advance. This paradigm's speed has changed at the moment, making it impossible to pinpoint a time point for it. One of the traits and skills of entrepreneurship is the ability to recognize and take advantage of new information and opportunities in the market (Tang et al., 2012; Gomez et al., 2018), which connects the subject of entrepreneurship literature to strategy.

In the past, innovative activities were carried out in secrecy and behind closed doors, but today a diverse set of partners, suppliers, and customers engage (Schmidt, 2010). Businesses must rely more on interpersonal connections, experiential learning, and research because they are never fully able to employ codified knowledge. It is critical and crucial for the firm's innovative efforts to be able to perceive the value of new products and external information, absorb it, modify it, and use it for business goals (Zahra and George, 2002). The capacity to assess and apply external knowledge is influenced by the knowledge sources, the depth of the underlying knowledge, and the firm's capacity to internalize this external knowledge. These skills are referred to as a firm's absorptive capacity as a whole (Cohen and Levinthal, 1990; Zahra and George, 2002; Salehi, 2022).

Open-mindedness is a requirement for managers and business owners. With this potential, they should assess and track customer and supplier behavior as well as the advancement of technology and new knowledge through feedback. In fact, with these evaluations, managers and business owners should have opportunities for business expansion (Rangus et al., 2017).

Being open-minded means being willing to actively look for evidence to support one's beliefs, plans, and preferred goals, as well as fairly evaluate and consider this evidence (Cemberci et al., 2021). They stated that having an open mindset is a crucial aspect of having an educated mind and is recognized as a way to maintain a cognitive connection with reality.

The purpose of this study is to ascertain how an open innovation mindset affects absorptive capacity, with entrepreneurial alertness serving as a mediating factor in small and medium-sized businesses that manufacture construction, utility, and industrial pumps. Due to the fact that they adopt innovation and entrepreneurship at a higher rate than large corporations, small and medium-sized businesses are the focus of this problem. In order to meet the challenge of the competitive environment, small and medium-sized businesses engaged in the production of various types of pumps and accessories need innovative activities. This innovation is developed by assessing business expansion opportunities. This issue demonstrates how an open innovation mindset and entrepreneurship alertness can influence absorptive capacity at the individual and organizational levels. In actuality, a nation's growth is brought on by this innovative mindset.

2. LITERATURE REVIEW

2.1. Absorptive Capacity

Absorptive capacity is influenced by the firm's prior experience (Cohen and Levinthal, 1990; Zahra and George, 2002; Salehi, 2022). The firm cannot properly evaluate the potential value of external knowledge and prior knowledge that is held by the firm's employees without taking this knowledge into account. As a result, the firm's absorptive capacity is equal to the sum of the absorptive capacities of all of its employees (Xiao and Qin, 2010; Cohen and Levinthal, 1990).

Learning first occurs at the individual level, then moves on to the group level, and finally, an organization learns (Bapuji and Crossan, 2004). The ability of individuals to develop a sustainable capacity for learning and the encouragement of knowledge sharing (by exchanging data and viewpoints in groups about the organization's resources) are key factors in the transfer of learning between organizational units. For absorbing new external knowledge, ideas, new knowledge, or business opportunities are fundamental prerequisites as well. In the context of technology, knowledge and information inside and outside a firm's boundaries are not considered to be open and free to be simply absorbed without any effort from the firms to acquire and use them (Fabrizo, 2009). Business must possess the required resources and expertise (Gray, 2006) as well as direct technological decisions to improve strategic opportunities (Ringberg et al., 2019).

The ability to interact with stakeholders, coworkers, competitors, and suppliers while maintaining an open mind to ideas allows for the acquisition of a wide range of in-depth knowledge in various fields. Jetter et al. (2006) defined the sources of innovation's knowledge according to the below ranking: 1) customers; 2) specialty publications; 3) staff; 4) production personnel; 5) suppliers; 6) sellers; 7) flyers and catalogs; 8) industrial exhibition; 9) commercial exhibition; and 10) business periodicals.

2.2. Open Innovation Mindset

The path and strategy for accelerating technological innovation are described as open innovation. This strategy was promoted by the shift inflow or outflow project and idea (Chesbrough, 2003). This variable is based on the paradigm that the firm can and ought to use both internal and external ideas and channels for reaching the market in order to hasten and enhance its technological and product innovation. Open innovation looks at how to use resources from within the firm as well as those from outside to produce more (Chesbrough, 2003). This model places a strong emphasis on the need to allow innovative ideas, such as products, projects, and technology, to enter the firm in order to increase revenue. An open mindset is a concept used in organizational research to describe a firm's capacity to comprehend and accept new ideas or to critically assess its experience with new knowledge (Cemberci et al., 2021).

In this sense, having a mindset or possessing psychological skills pertaining to attitudes, ideas, beliefs, and behavioral patterns can be considered a mindset (Urze et al., 2019). By altering cognitive structures, thinking patterns, and fundamental

presumptions that underpin behavior, an open mindset seeks to change organizational values, norms, and behaviors (Cemberci et al., 2021). Open minds encourage free knowledge exchange between the parties, which supports the firm's innovativeness. Being too open, however, is not always seen as advantageous for the firm's innovation performance (Salampasis et al., 2015).

Therefore, estimating the open mindset of employees who recognize, assess, and take advantage of new opportunities in interaction with the environment leads to an estimation of a firm's intelligence. According to researchers, managerial mindsets serve as the primary guiding force in the use of both new and existing technologies (Ringberg et al., 2019). They contend that self-aware managers use reason to differentiate between the various potential opportunities that a particular technology enables. To adapt to new technology, managers alter their perspectives and guide the firm's strategic direction (Ringberg et al., 2019).

Open mindset, which promotes challenging preconceived notions and ways of thinking, being receptive to novel experiences, exchanging ideas, and weighing alternative viewpoints. A willingness to take into account new and different perspectives for an individual can be characterized as an open innovation mindset. However, it refers to fostering an atmosphere where the pursuit of new knowledge and its acceptance are valued in organizations (Cemberci et al., 2021). They further state that an open mindset is a sought-after skill among employees because it fosters greater creativity and innovation. It goes without saying that the management team needs to be flexible in order to maintain the organization.

Building absorptive capacity is facilitated by an open innovation mindset (Rangus et al., 2017). The ability to absorb new information interacts with outside knowledge through licensing, contracts, and partnerships with various partners, R&D facilities, and joint ventures (Cohen and Levinthal., 1990; Zahra and George, 2002; Rangus et al., 2017). When this interaction occurs between the levels of the individual, it implies knowledge sharing and an improvement in their learning capacities (Liao et al., 2007; Rangus et al., 2017). As a result, increased interaction with external knowledge will enhance a firm's knowledge absorptive capacity (Rangus et al., 2017). The following is suggested by this discussion.

H1: Open innovation mindset at the individual level has a significant impact on entrepreneurial alertness.

H2: Open innovation mindset has a significant impact on absorptive capacity.

2.3. Entrepreneurial Alertness

Kirzner et al. (1979); Foss and Klein (2010); Yu (2001); Tang et al. (2010) applied conceptual alertness and awareness to find gaps and new opportunities and to scan and search for new knowledge from the environment. Kirzner (1979); Tang (2008); Tang et al. (2012) described alertness as the ability to recognize new opportunities without searching that are overlooked by other people. This ability has been described as an individual image of the future business by Kirzner (1979), Tang (2008), Tang et al. (2012), and Valliere (2012). Brown and Ulijn (2004) stated that entrepreneurship is an activity of applying opportunities for creation via innovation. It could be done by an individual or by a team within the venture (Brown and Ulijn, 2004). According to researchers, the concept of alertness has three functions: scanning and searching, continuity and communication, and evaluation and judgment about the existence of potential business opportunities (Tang et al., 2012; Gomezel et al., 2018).

In this research, entrepreneurial alertness played as a mediating variable. Open innovation enhances a firm's absorptive capacity because it facilitates entrepreneurial alertness as a core opportunity (Kirzner et al., 1979; Foss and Klein, 2010; Yu, 2001; Tang et al., 2010). The mobility of knowledge makes it impossible to keep all the best talents and relevant knowledge within companies; instead, companies need to look outside for new paths to innovation (Chesbrough, 2003). Opportunities present themselves as ideas. Users, consultants, suppliers, universities, and rivals could all be sources of crucial information that will enable the individual to create a new concept (Salter et al., 2015). To develop these viewpoints, nurturing is required (Salter et al., 2015). They mentioned that open innovation activities are associated with changes in research and development performance (Salter et al., 2015). Open innovation mindset at individual level as ideas are ability that is digested and developed by the firm's capability. This activity performs the same function as absorptive capacity. The accumulation of technological knowledge increases the firm's ability to evaluate and use new technologies and skills in product innovation (Zahra and George, 2002; Salehi, 2022). Firms that need to use external knowledge need to promote initiative at the individual level to create a pathway through knowledge absorptive capacity.

Kirzner (1979) characterized individuals who are more alert as having an "antenna" that permits recognizing gaps with limited clues. Moreover, alertness includes creative and imaginative action and may impact the type of transactions in future market periods. Kirzener (1979) and Qing and Chen (2009) mentioned that alertness creates behaviors towards providing future opportunities and previously undiscovered opportunities. The following is suggested by this discussion.

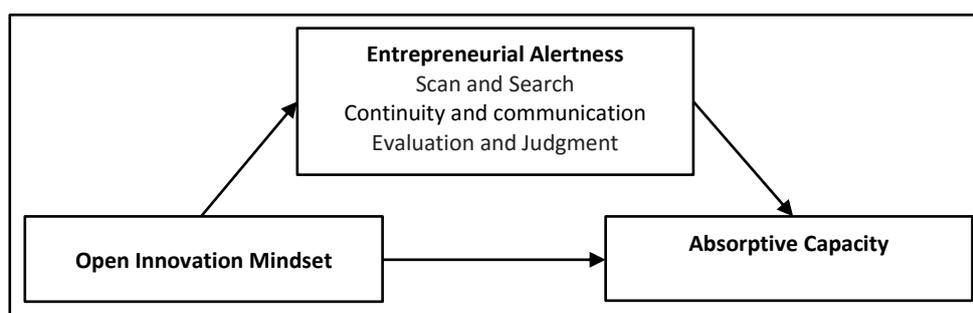
H3: Entrepreneurial alertness has a significant effect on absorptive capacity.

H4: Entrepreneurial alertness has a mediating role between the impact of open innovation and absorptive capacity.

3.METHOD

The conceptual model of the research is shown in Figure (1). The statistical population of this research consists of 430 managers of small and medium-sized companies producing all kinds of industrial, utility, and construction pumps and their parts. In this regard, 131 firm managers have been selected as the sample size using a non-probability sampling method. The research questionnaire was distributed and collected among the managers of these companies as an evaluator of the firm's capabilities and the respondents to the questionnaire. The questionnaire was taken from the articles (Gomez et al., 2018; Rangus et al., 2017).

Figure 1: Conceptual Model



Descriptive and inferential tests have been used to analyze the data in this research. In the descriptive part, percentage, average, and standard deviation were calculated, and in the inferential part, SPSS and Smart PLS software were used to analyze the research data. The PLS model is tested and interpreted in two steps. 1) measurement model and a 2) structural model. The measurement model, or part of the confirmatory factor analysis, to answer questions related to the validity and reliability of the measurement, determines how the latent variables or sub-constructs are measured in the form of a larger number of observable variables. The structural model also shows the relationships between structures (latent variables) and their explanatory power. The measurement indices of the variables of the research model are given in Table (1).

Table 1: Measurement Indicators

Variables	Measurement indicators	References
Open innovation mindset	Getting feedback from customers to improve products and services Getting friends' and acquaintances' feedback on how to make products and services better Building new connections with other institutions to discuss the actions of the firm Using an innovative strategy for creating, producing, or selling products or services	Gomez et al., (2018)
Absorptive capacity	Regular communication with corporate headquarters to learn new information Obtain market information using unauthorised channels It is scarcely practical to visit the firm's other divisions. Occasionally arranges special meetings with customers or other outside parties to learn fresh information Keep in touch with consultants, accountants, and tax advisors on a regular basis. How quickly market shifts are identified Quick insight into potential new client-serving prospects Swiftly evaluate and appreciate changing market requirements Regularly considers how changing market demand may affect the creation of new products and services Keep track of fresh information and save it for later use. Swiftly assesses the value of new external knowledge for current knowledge Practical information is rarely provided Take advantage of the opportunities that fresh, outside information offers for our group.	Jansen, et al., (2005)

Variables	Measurement indicators	References
	They meet together on occasion to discuss how market trends and the creation of new products have an impact. It is evident how tasks inside our unit should be completed. Our unit disregards customer complaints Clearly defined roles and responsibilities Always consider how to use knowledge most effectively. Introducing new products and services can be difficult. Terms used frequently to describe our products and services	
Entrepreneurial alertness		
Scan and search	Engage others to learn new information Reading newspapers, magazines, trade publications, and brochures on a regular basis to learn new information Regularly using the Internet The ongoing process of looking for new knowledge Eagerness to learn new things	
Continuity and communication	The presence of linkages and links among data that initially appear to be unrelated and jumbled The capacity to connect the dots in data and information The capacity to comprehend the relationship between facts and previously undiscovered information	Gomez et al., (2018)
Evaluation and judgment	The capacity to see and differentiate between profitable prospects Ability to spot important opportunities The capacity to pick an excellent opportunity from among several available ones	

4. RESULTS

4.1. Factor Loading Test

The weight values of the factor loadings of this questionnaire shows in Appendix 1. The minimum allowed factor loading value is 0.7, and as shown in the table below, the weight of factor loading for all questions is greater than 0.7. Based on this, it can be concluded that the questions determined to measure each variable have the appropriate weight to measure their specific variable.

4.2. Convergent Validity

Convergent validity determines to what extent the questions specified for each variable have appropriate convergence for measuring the relevant variable and are able to measure that variable. In the partial least squares (PLS) method, the average value of the extracted variance (AVE) is investigated. The criterion of acceptable convergent validity is that the value of AVE is greater than 0.5. As can be seen in Table (2) below, all the calculated AVE values are greater than 0.5, which indicates the appropriate convergent validity of the questionnaire questions to measure each variable. Average Variance Extracted (AVE) is a measure of the amount of variance that is captured by a construct in relation to the amount of variance due to measurement error.

Table 2: AVE Mounts

Variables	Average Variance Extracted (AVE)
Absorptive capacity	0.82
Open innovation mindset	0.74
Entrepreneurial alertness	0.81
Continuity and communication	0.78
Evaluation and judgment	0.89

4.3. Divergent Validity

The meaning of divergent validity is that the questions related to the measurement of each variable do not overlap with other research variables. As can be seen, the values of the average root of the extracted variance (Table 3), which are placed in the diameter of the matrix of the table, are larger than all the correlation values calculated in the same column.

Table 3: Divergent Validity

Variables	Evaluation and judgment	Continuity and communication	Open innovation mindset	Scan and search	Absorptive capacity
Evaluation and judgment	0.94				
Continuity and communication	0.80	0.88			
Open innovation mindset	0.68	0.71	0.86		
Scan and search	0.86	0.80	0.66	0.90	
Absorptive capacity	0.73	0.71	0.72	0.72	0.90

Based on this, it can be concluded that the instrument used in the research has a suitable divergent validity, which means that the questions of each structure have a higher correlation with the related structure than other structures.

4.4. Descriptive Statistics

Table (4) shows the statistical description of the data in this research. Absorptive capacity variable among the samples of this research was equal to 2.92 with a standard deviation of 1.13, and the minimum score for this variable was 1.05, and the maximum score was 4.95. The average of the entrepreneurial alertness variable among the samples of this research is equal to 2.73 with a standard deviation of 0.93. The minimum score for this variable is 1.09 and the maximum score is 4.64. The average of the open innovation mindset variable among the samples of this research was 2.91 with a standard deviation of 0.94, and the minimum score for this variable was 1 and the maximum score was 5.

Table 4: Descriptive Statistics

Variables	Minimum	Maximum	Average	Standard Deviation
Absorptive capacity	1.05	4.95	2.92	1.13
Entrepreneurial alertness	1.09	4.64	2.73	0.93
Open innovation mindset	1	5	2.91	0.94

4.5. Coefficient of Determination: R² (Predictability) and Model Fit (GOF)

The following Table (5) shows the coefficient of determination (R²) values for the variables of entrepreneurial alertness and absorptive capacity. Considering that the final dependent variable of the research model is absorptive capacity, the determination coefficient for this variable indicates the prediction of the changes of this variable by other variables of the model. Considering that the value of the coefficient of determination for the absorptive capacity variable is about 0.65, it can be concluded that almost 65% of the changes in the absorptive capacity variable are determined by other research variables, namely, entrepreneurial alertness and open innovation mindset.

The overall fit of the research (GOF) is estimated at 0.75. The three values of 0.1, 0.25, and 0.36 represent weak, medium, and strong values for the fit of the structural model. Therefore, it can be concluded that the model has a strong and appropriate fit.

Table 5: Values of Coefficients of Determination (R²) and Model Fit (GOF)

Variables	The coefficient of determination
Entrepreneurial alertness	0.52
Absorptive capacity	0.65
GOF=0.75	

Based on the model tested in Smart-PLS software and the results of the model test, the confirmation or rejection of the hypotheses of the current research is reported as follows.

4.6. Hypothesis Testing

Table (6) shows the model tested in the Smart-PLS software and the model test results.

The result of hypothesis 1 shows the value of the obtained t statistic is equal to 9.11, which is greater than 1.96, so it can be concluded that the above-mentioned hypothesis is confirmed and open innovation mindset at the confidence level of 95%. It has a significant effect on entrepreneurial alertness and the value of this effect is equal to $\beta=0.72$.

The result of hypothesis 2 shows the value of the t statistic obtained from the test is almost equal to 2.10, which is greater than 1.96, so it can be concluded that the above hypothesis is confirmed at a confidence level of 95%. Also, open innovation mindset has a significant impact on absorptive capacity.

The result of hypothesis 3 shows the value of the t statistic obtained is equal to 3.16, which is greater than 1.96, so it can be concluded that the hypothesis is accepted at the confidence level of 95% and entrepreneurial alertness. It has a significant effect on the absorptive capacity.

The result of hypothesis 4 shows the value of the standard path coefficient for the influence of open innovation mindset on entrepreneurial alertness is equal to 0.722 and the t statistic for this relationship is 9.107. The standard path coefficient for the influence of entrepreneurial alertness on absorptive capacity is 0.514 and the t statistic is equal to 3.154, which, considering that the value of the t statistic for both routes is greater than 1.96, both hypotheses are confirmed. Also, the impact of open innovation mindset on entrepreneurial alertness and the impact of entrepreneurial alertness on absorptive capacity, as well as the indirect value of the Sobel test, which is equal to 2.98 and greater than 1.96. This result shows that the mediating hypothesis of entrepreneurial alertness in the influence of open innovation mindset on absorptive capacity has been confirmed. In examining the direct path, the value of t statistic related to the impact of the open innovation mindset on absorptive capacity is equal to 2.10, which is more than 1.96, and it shows that the innovation mindset has an effect on absorptive capacity through the mediating variable of entrepreneurial alertness. and can directly change the absorptive capacity. Based on these findings, it is possible to conclude that the entrepreneurial alertness variable serves as a partial mediator in the impact of the open innovation mindset on absorptive capacity. The total path coefficient of the mediating variable equal to 0.72 shows that for one unit of change in the open innovation mindset, the absorptive capacity variable has a change of 72%, and 37% of these changes are due to changes in entrepreneurial alertness.

Table 6: Test of Research Hypotheses

Hypotheses	Standard path coefficient	t statistic	Result
H1: Open innovation mindset at the individual level has a significant impact on entrepreneurial alertness.	0.722	9.107	Accepted
H2: Open innovation mindset has a significant impact on absorptive capacity.	0.350	2.095	Accepted
H3: Entrepreneurial alertness has a significant effect on absorptive capacity.	0.514	3.154	Accepted
H4: Entrepreneurial alertness has a mediating role between the impact of open innovation and absorptive capacity.	Direct 0.35 Indirect 0.37	Direct 2.10 Indirect 2.98	Accepted

5. CONCLUSION

In this research, the impact of an open innovation mindset on absorptive capacity with the mediating role of entrepreneurial alertness in small and medium-sized firms producing all kinds of pumps and parts for industrial, utility, and construction has been measured. The results show that in today's world, people and organizations that do not use an open and interactive mindset to receive opportunities and ideas are less likely to succeed.

Researchers state that entrepreneurial awareness as a mediator and perceptual and cognitive process in people can recognize and recognize existing opportunities. They proved that ideas and projects are identified at the individual level with the aim of creating value (Kirzner, 1979; Hou, 2008; Foss and Klein, 2010; Tang et al., 2012; Gomezel et al., 2018).

Interaction with the external environment to acquire ideas, research and development units (Cohen and Levinthal., 1990; Zahra and George, 2002; Salehi, 2022), universities, collaboration with different partners and joint ventures realizes new opportunities (Chesbrough, 2003; Çemberci et al., 2021) through an open innovation mindset (Gomezel et al., 2018) and has an impact on the formation of absorptive capacity and increase firm ability to knowledge absorptive.

The following recommendations are provided in light of the findings and hypotheses of this study in an effort to raise entrepreneurial awareness and, eventually, increase one's capacity to take in fresh outside knowledge: Employees in the customer relations department and the manufacturing department should be considered as essential sources of knowledge when developing ideas in order to increase the impact of the open innovation mindset. The requirements for participation in specialized exhibitions of manufactured goods should also be prepared and taken into consideration in order to enhance the impact of entrepreneurial alertness. This will allow for the informed use of new product markets and opportunities in accordance with the direction of the knowledge and technology market.

REFERENCES

Bapuji, H. and M. Crossan (2004). From questions to answers: reviewing organizational learning research. *Management Learning*, 35(4), 397-417.

- Brown, T. E., & Ulijn, J. M. (Eds.). (2004). *Innovation, entrepreneurship and culture: the interaction between technology, progress and economic growth*. Edward Elgar Publishing.
- Çemberci, M., et al. (2021). The role of network learning capability in the relationship between open mindedness and innovation performance. *Postmodern Openings*, 12(4), 18-41.
- Chesbrough, H., Vanhaverbeke, W., & West, J. (Eds.). (2006). *Open innovation: Researching a new paradigm*. Oxford University Press on Demand.
- Chesbrough, H. W. (2003). *Open Innovation: The New Imperative for Creating and Profiting from Technology*. Harvard Business School Press.
- Cohen, W. M. and D. A. Levinthal (1990). Absorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly*, 35(1), 128-152.
- Drucker, P. F. (2002). The discipline of innovation. *Harvard Business Review*, 80(8), 95-102.
- Fabrizio, K. R. (2009). Absorptive capacity and the search for innovation. *Research Policy*, 38(2), 255-267.
- Foss, N. J. and P. G. Klein (2010). Alertness, action, and the antecedents of entrepreneurship. *The Association of Private Enterprise Education*, 25(2), 145-164.
- Gomezel, A. S. and K. Rangus (2018). An exploration of an entrepreneur's open innovation mindset in an emerging country. *Management Decision*, 56(9), 1869-1882.
- Gray, C. (2006). Absorptive capacity, knowledge management and innovation in entrepreneurial small firms. *International Journal of Entrepreneurial Behavior & Research*, 12(6), 345-360.
- Herrmann, A., et al. (2006). Determinants of radical product innovations. *European Journal of Innovation Management*, 9(1), 20-43.
- Jetter, A., et al., Eds. (2006). *Knowledge Integration: The Practice of Knowledge Management in Small and Medium Enterprises*, Physica Heidelberg.
- Kirzner, I. M. (1997). Entrepreneurial discovery and the competitive market process: an Austrian approach. *Journal of Economic Literature*, 35(1), 60-85.
- Lee, J. N. and B. Choi (2010). Determinants of knowledge management assimilation: an empirical investigation. *IEEE Transactions on Engineering Management*, 57(3), 430-449.
- Liao, S.-h., et al. (2008). Relationships between knowledge inertia, organizational learning and organization innovation. *Technovation*, 28(4), 183-195.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37.
- Qiao, M. and D. Chen (2010). Growing Though Innovatively Exploiting Context-Related Knowledge- Cases of Entrepreneurial Firms from China's Information Technology Industry. 2010 International Conference on Management and Service Science.
- Rangus, K., et al. (2017). The role of open innovation and absorptive capacity in innovation performance: Empirical evidence from Slovenia. *Journal of East European Management Studies* 22(1), 16-27.
- Ringberg, T., et al. (2019). The technology-mindset interactions: Leading to incremental, radical or revolutionary innovations. *Industrial Marketing Management*, 79, 102-113.
- Salampasis, D. G., et al. (2015). Trust embeddedness within an open innovation mindset. *International Journal of Business and Globalisation*, 14(1), 32-57.
- Salehi, N. (2022). How firm appropriately apply new external knowledge: The waterfall model of absorptive capacity and innovation. *Journal on Innovation and Sustainability*, 13(2), 73-83.
- Salter, A., et al. (2015). Open for ideation: individual-level openness and idea generation in R&D. *Journal of Product Innovation Management*, 32(4), 488-504.
- Schmidt, T. (2010). Absorptive capacity—one size fits all? A firm-level analysis of absorptive capacity for different kinds of knowledge. *Managerial and Decision Economics*, 31(1), 1-18.
- Sharabati-Shahin, M. and K. Thiruchelvam (2009). Diaspora Entrepreneurial Knowledge Networks: A Strategic Option for Medium and Low Income Countries. 2009 International Association of Computer Science and Information Technology - Spring Conference.
- Tang, J. (2008). Environmental munificence for entrepreneurs: entrepreneurial alertness and commitment. *International Journal of Entrepreneurial Behavior & Research*, 14(3), 128-151.
- Tang, J., et al. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of Business Venturing*, 27(1), 77-94.
- Urze, P., et al. (2019). *Open Innovation Practitioners Mindset on Risk. Collaborative Networks and Digital Transformation*, Cham, Springer International Publishing.
- Valliere, D. (2013). Towards a schematic theory of entrepreneurial alertness. *Journal of Business Venturing*, 28(3), 430-442.

Yu, T. F.-L. (2001). Entrepreneurial alertness and Ddscovery. *The Review of Austrian Economics*, 14(1), 47-63.

Zahra, S. A. and G. George (2002). Absorptive capacity: a review, reconceptualization, and extension. *The Academy of Management Review*, 27(2), 185-203.

APPENDIX 1: Values of Factor Loads

Items	Open innovation mindset	Absorptive capacity	Entrepreneurial alertness		
			Scan and search	Continuity and communication	Evaluation and judgment
ABC1		0.863218			
ABC10		0.907024			
ABC11		0.919977			
ABC12		0.942180			
ABC13		0.910508			
ABC14		0.905762			
ABC15		0.928479			
ABC16		0.909837			
ABC17		0.886313			
ABC18		0.935147			
ABC19		0.924923			
ABC2		0.877625			
ABC20		0.891273			
ABC3		0.874684			
ABC4		0.920247			
ABC5		0.853341			
ABC6		0.925394			
ABC7		0.928642			
ABC8		0.887094			
ABC9		0.897298			
AC1					0.947328
AC2					0.943878
AC3					0.948437
CO1				0.884136	
CO2				0.880323	
CO3				0.884986	
SC1			0.912691		
SC2			0.871711		
SC3			0.890566		
SC4			0.895351		
SC5			0.940310		
INO1	0.837714				
INO2	0.858516				
INO3	0.839496				
INO4	0.906223				