



Identifying Factors Affecting Entrepreneurship and Organizational Agility (Case Study: Mashhad University of Medical Sciences)

Mohsen Sadeghpour¹,
Moslem Cherabin^{2*},
Gholam Abbas Shekari³,
Ahmad Zendei⁴
¹PhD Student, Department
of Educational Sciences,
Neyshabur Branch, Islamic
Azad University, Neyshabur,
Iran

²Department of Educational
Sciences, Neyshabur
Branch, Islamic Azad
University, Neyshabur, Iran

³Department of
Management, Mashhad
University, Mashhad, Iran

⁴Department of Statistics,
Neyshabur Branch, Islamic
Azad University, Neyshabur,
Iran

*Islamic Azad University
Pazhouhesh Blvd.
Neyshabur, 9319975853
Iran

Tel: +9851 42621910
Fax: +9851 42615472

Email:
moslemch2015@gmail.com

Background: Today, government agencies, including medical universities, are facing a changing environment that needs to take advantage of new approaches such as entrepreneurship and organizational agility to maintain or enhance the competitive advantages. Therefore, this study was designed to identify the factors affecting entrepreneurship and agility of organizations that have a great impact on sustainability in today's changing and competitive environment of organizations.

Methods: The present study is a qualitative study done in two stages of reviewing literature and expert opinion survey by Delphi method. In the first step, the variables affecting agility and organizational entrepreneurship were extracted by reviewing related literature. The variables extracted were then finalized by Delphi method through the consensus of experts. Based on the findings of the study, 8 dimensions for organizational agility questionnaire and 6 dimensions for entrepreneurship questionnaire were identified; 27 components for organizational agility and 39 components for entrepreneurship were obtained.

Results: The results showed that there are many different factors affecting entrepreneurship and agility of the organization, including factors affecting organizational agility, flexibility, organizational culture, human capital, organizational agility, change management, information, and communication technology. Also, factors affecting entrepreneurship include human factors, entrepreneurship culture, motivational factors, accelerating variables, information technologies, and rehabilitation variables.

Conclusion: It seems that, considering the need for current organizations to benefit from the move towards entrepreneurial management and agility, managers will pay particular attention to the effective dimensions of this management style identified in the present study. Providing resources, facilities, and equipment needed to achieve these dimensions can help to continually improving the organization.

Keywords: Entrepreneurship, Agility, University of Medical Sciences, Organization

تحديد العوامل التي تؤثر على ريادة الأعمال والسرعة التنظيمية (دراسة حالة: جامعة مشهد للعلوم الطبية)

الخلفية: تواجه الوكالات الحكومية، منها الجامعات الطبية، اليوم بيئة متغيرة تحتاج إلى الاستفادة من الأساليب الجديدة مثل ريادة الأعمال والسرعة التنظيمية للحفاظ على التمايز التنافسي أو تعزيره. لذلك، تم تصميم هذه الدراسة لتحديد العوامل التي تؤثر على روح المبادرة وخفة الحركة من المنظمات التي لها تأثير كبير على الاستدامة في بيئة اليوم المتغيرة والتنافسية للمنظمات.

الأساليب: هذه الدراسة هي دراسة نوعية تم إجراؤها على مرحلتين، فحص المتون ومسح رأي الخبراء بطريقة دلفي. في الخطوة الأولى، تم استخراج المتغيرات التي تؤثر على خفة الحركة وريادة الأعمال التنظيمية من خلال مراجعة المتون ذات الصلة. تم الانتهاء من المتغيرات المستخرجة بواسطة طريقة دلفي وبعد التوصل إلى توافق آراء الخبراء. بناءً على نتائج الدراسة، تم تحديد 8 أبعاد لاستطلاع خفة الحركة التنظيمية و 6 أبعاد لريادة الأعمال. الحصول على 27 مكوناً لأبعاد الرضا التنظيمية و 39 عنصراً لريادة الأعمال.

النتائج: أظهرت النتائج أن هناك العديد من العوامل المختلفة التي تؤثر على روح المبادرة وخفة الحركة في المنظمة، منها المرونة، الثقافة التنظيمية، العوامل البشرية، خفة الحركة التنظيمية، إدارة التغيير، و تكنولوجيا المعلومات والاتصالات. أيضاً، تشمل العوامل التي تؤثر على ريادة الأعمال: العوامل البشرية، ثقافة ريادة الأعمال، العوامل التحفيزية، المتغيرات المتسارعة، تكنولوجيا المعلومات و متغيرات إعادة التأهيل.

الخلاصة: يبدو أنه، بالنظر إلى الحاجة إلى المنظمات الحالية للاستفادة من التحرك نحو إدارة المشاريع وخفة الحركة، فإن المديرين سوف يولون اهتماماً خاصاً للأبعاد الفعالة لأسلوب الإدارة المحدد في هذه الدراسة، و توفير الموارد والمرافق والمعدات اللازمة لتحقيق هذه الأبعاد يمكن أن تساعد في تحسين المنظمة باستمرار.

الكلمات المفتاحية: ريادة الأعمال، رشاقته (سرعه العمل)، جامعة العلوم الطبية، المنظمة

شناسایی عوامل موثر بر کارآفرینی و چابکی سازمان (مورد مطالعه: دانشگاه علوم پزشکی مشهد)

زمینه و هدف: امروزه سازمان های دولتی از جمله دانشگاه های علوم پزشکی با محیط در حال تغییری مواجه شده اند که برای حفظ و یا ارتقاء مزیت های رقابتی می بایست از رویکردهای نوینی چون کارآفرینی و چابکی سازمانی بهره مند باشند. بنابراین، این مطالعه با هدف شناسایی عوامل موثر بر کارآفرینی و چابکی سازمان ها که تاثیر زیادی بر ماندگاری در محیط متغیر و رقابتی امروزه سازمان ها دارد، نگاشته شده است.

روش: مطالعه حاضر یک مطالعه کیفی می باشد که در دو مرحله بررسی متون و نظر سنتجی از خبرگان به روش دلفی انجام پذیرفت. در مرحله اول، با بررسی متون مرتبط، متغیرهای های موثر بر چابکی و کارآفرینی سازمانی، استخراج شدند. سپس متغیر های استخراج شده با استفاده از روش دلفی و پس از رسیدن به اجماع نظر خبرگان نهایی شدند. براساس یافته های مطالعه، 8 بعد برای پرسشنامه چابکی سازمانی و 6 بعد برای پرسشنامه کارآفرینی شناسایی شد و برای ابعاد چابکی سازمانی، تعداد 27 مولفه و برای ابعاد کارآفرینی تعداد 39 مولفه به دست آمد.

یافته ها: نتایج تحقیق نشان داد، عوامل زیاد و متنوعی بر کارآفرینی و چابکی سازمان موثر هستند از جمله عوامل موثر بر چابکی سازمان، انعطاف پذیری، فرهنگ سازمانی، سرمایه انسانی، چابکی سازمان، مدیریت تغییر، تکنولوژی اطلاعات و ارتباطات را می توان نام برد. همچنین، از عوامل موثر بر کارآفرینی می توان به عوامل انسانی، فرهنگ کارآفرینی، عوامل انگیزشی، متغیرهای تسریع کننده، فناوری های اطلاعات و متغیرهای توانبخشی اشاره کرد.

نتیجه گیری: به نظر می رسد با توجه به نیاز سازمانهای کنونی به بهره مندی از مزایای حاصل از حرکت به سمت مدیریت کارآفرینی و چابکی سازمان، مدیران از طریق بذل توجه ویژه به ابعاد موثر بر این سبک مدیریت که در مطالعه حاضر شناسایی شده اند، تا مین منابع، امکانات و تمهیدات لازم برای دست یابی به این ابعاد، می توانند در راستای بهبود مستمر سازمان قدم بردارند.

واژه های کلیدی: کارآفرینی، چابکی، دانشگاه علوم پزشکی، سازمان

آرگنٹیشن میں روزگار کے مواقع فراہم کرنے اور غیر ضروری افرادی قوت کی چھٹائی پر اثر انداز ہونے والے عوامل کی شناخت (یہ تحقیق مشهد یونیورسٹی آف میڈیکل سائنس میں انجام دی گئی)

بیک گراؤنڈ: آج کی دنیا میں سرکاری ادارے جیسے میڈیکل یونیورسٹیوں میں بنیادی تبدیلیاں آ رہی ہیں، یہ تبدیلیاں ان سرکاری اداروں کی ترقی اور بقا کے لئے نہایت اہمیت رکھتی ہیں اور انہیں روزگار کے مواقع فراہم کرنے کے ساتھ ساتھ غیر ضروری اسامیوں بھرنے سے بھی پرہیز کرنا چاہیے۔ یہ تحقیق ان عوامل کی شناخت کی غرض سے کی گئی ہے جو اداروں میں روزگار کے مواقع فراہم کرنے اور غیر ضروری ملازمتوں سے پرہیز کرنے پر اثر انداز ہوتی ہیں۔ یہ عوامل بدلتے ہوئے ماحول میں ان اداروں کی بقا اور شدید مسابقت میں ان کی کامیابی کا سبب بھی بنتے ہیں۔

روش: یہ تحقیق دو مرحلوں پر مشتمل ہے۔ ان دو مرحلوں میں میڈیکل متون کا جائزہ لیا گیا اور سروے بھی کیا گیا، ان دونوں کاموں کا تجزیہ ڈالفی روش سے انجام پایا۔ پہلے مرحلے میں متعلقہ متون کا جائزہ لیا گیا اور ان سے آرگنٹیشن میں غیر مفید اسامیوں کو بھرنے سے پرہیز اور روزگار کے مواقع فراہم کرنے کے عمل پر اثر انداز ہونے والے پیرا میٹر نکالے گئے، اس کے بعد ان پیرا میٹرس کا ڈالفی روش سے تجزیہ کیا گیا اور ان پر ماہرین کے اتفاق کے بعد انہیں حتمی شکل دی گئی۔ اس تحقیق کے نتائج کے مطابق غیر ضروری اسامیوں کو بھرنے سے پرہیز کے لئے آٹھ پیرا میٹر اور روزگار کے مواقع فراہم کرنے کے لئے چھ پیرا میٹرس ہائے آئے۔ اس کے علاوہ غیر ضروری اسامیوں سے پرہیز کے لئے سنٹائیس عنصر اور روزگار کے مواقع فراہم کرنے کے لئے انتالیس عنصر کا پتہ چلا۔

نتیجے: اس تحقیق سے پتہ چلتا ہے کہ مختلف طرح کے عوامل روزگار کے مواقع فراہم کرنے اور غیر ضروری اسامیوں کو پر کرنے سے پرہیز کرنے کے عمل پر اثر انداز ہوتے ہیں ان میں، قوانین کو آسان بنانا، ثقافت سازی، افرادی قوت، تبدیلیاں لانا، انفارمیشن ٹکنالوجی، جیسے امور کی طرف اشارہ کیا جاسکتا ہے۔ اس کے علاوہ انسانی عوامل، دلچسپی سے کام کرنے کے جذبے کو فروغ دینا، تیز ترقی لانے اسباب پر عمل کرنا اور باز آباد کاری جیسے امور بھی موثر واقع ہوتے ہیں۔

سفرارشی: اس امر کے پیش نظر کہ اداروں کو روزگار کے مواقع فراہم کرنے اور غیر ضروری اسامیوں سے بچنے سے فائدہ پہنچ رہا ہے تو اداروں کے اعلیٰ عہدیداروں کو ہماری تحقیقات کے نتائج پر عمل کرنے کے لئے ضروری اقدامات کرنے چاہیں تاکہ وہ اپنے ادارے کو ترقی کی سمت گامزن کر سکیں۔

کلیدی الفاظ: روزگار کے مواقع، یونیورسٹی آف میڈیکل سائنس، ادارے

INTRODUCTION

Nowadays, government agencies such as universities of medical sciences and private organizations are faced with a changing environment that has features like competitiveness, rapidly changing technologies, variety of public demand, speed in replication, and customer satisfaction while there is a need to reduce the costs. In order to effectively perform the functions of government agencies in such environments, some market-based approaches such as privatization, public-private partners, outsourcing, and organizational entrepreneurship have been introduced. Unlike the first three approaches, organizational entrepreneurship through improving the internal capabilities of the organization can be one of the useful tools of government agencies to deal with environmental changes and also the best approach to solve these perceptions that have failed to deliver optimal public sector services. There are many definitions for organizational entrepreneurship. Organizational entrepreneurship can be defined as the process of creating and pursuing opportunities, regardless of the resources under control (1). In other words, organizational entrepreneurship is the process of discovering, evaluating, and exploiting opportunities to create a new product or service in the future (2). Agility, on the other hand, means fast, agile, capable of moving fast and easy, and capable of quick thinking with a clever approach that has been introduced as opportunities to respond to changes in the business environment and exploit those changes. Agility in government agencies is very important because the results and successes of agile government agencies are impressive and commendable. In a study conducted by the IT Cornie Institute from 8 countries, the results showed that agile government agencies grew by 53 percent in productivity, 38 percent in employee satisfaction, and 3 percent in customer or consumer satisfaction. Governments that invest in speed, flexibility, and accountability are likely to achieve their goals because political, social, economic, and technological factors increasingly influence governments and their decisions and enable citizens to access services faster, so they need more expertise. As a result, they need to develop and implement policies faster than ever before, since agility can certainly help organizations and institutions accomplish this mission and achieve organizational goals (3).

The results of some studies, such as Sadat Khorramgan's research in 2012, which examined entrepreneurship and organizational agility among selected entrepreneurial firms in Tehran, showed that among individual, environmental and organizational entrepreneurial factors, there is a meaningful relationship between two individual and environmental factors with some Organizational agility components (4). Also in 2009, Alimardani et al. investigated the relationship between organizational structure (more agile structure) and entrepreneurship at Shahid Beheshti University. The results indicated that there is a positive relationship between organizational structure and organizational entrepreneurship (5).

However, Mashhad University of Medical Sciences is the largest health care center in the east of the country, providing

services not only in the east but also in other parts of the country as well as in neighboring countries. Like all other government agencies, the university has been affected by adverse economic conditions in recent years; however, it is an issue that service delivery based on the university's mission will be hampered. On one hand, some actions were done to get out of the current situation as well as to create the right space in the long run, on the other hand it has been imperative to create a tool for vanguard. So in order to be able to choose the right path we need to identify the current situation and the capacities and potentials, otherwise we will have trouble planning. To this end, simply having a roadmap does not mean success, and it requires serious determination, so new approaches must be adopted. With a new approach to managing executive organs the key will be resistance economy, and putting entrepreneurship based in agility can greatly improve productivity, customer satisfaction, and speed in accountability. On one hand, by focusing on organizational entrepreneurship, it provides unique innovation in financial services and on the other hand, agile-based policies provide flexibility unto situations and quick responding. However, given the nature of organizational entrepreneurship, this can provide the basis for the emergence of creativity and innovation that is essential to implementing a resilient economy in real terms. Putting Entrepreneurship next to Agility is important because many government agencies have been accused for lack of agility, which is incompatible with environmental change, so putting these two variables together can go a long way toward enhancing University of Medical Sciences.

Also, since organizational entrepreneurship in universities has not been given enough attention so far, and there has always been distances between universities and the labor markets, in this study we decided to design an organizational entrepreneurship model with an agile approach to enhance the university's ability to cope with environmental change, resolve financial problems and constraints

METHODS

This study is a descriptive study in terms of purpose, and is the result of a realistic and systematic description of the characteristics of a phenomenon or a subject that is not merely about discovering and explaining relationships, correlations, and possibly hypotheses, but rather about describing situations. However, in terms of results and consequences, this study is an applied study. Applied study is an attempt to find solutions to the real-world problems and difficulties. From the perspective of implementation process, this is a mixed method study. Mixed research is a type of research that is characterized by qualitative and quantitative research. The mixed approach has many different types; this study is an exploratory sequential research. In this study, first, the qualitative data were collected and analyzed, and secondly, the quantitative data were collected. Finally, both quantitative and qualitative analyzes were examined simultaneously. From the perspective of logic implementation, this study can be considered as an inductive study. In this type of reasoning, the researcher attempts to derive results from observing or experiencing multiple

objective evidences during an evolutionary process, by accepting a degree of error and probability, by assuming ambient environmental conditions to generalize other similar phenomena. And finally, from a temporal point of view, the present study is a cross-sectional study. An important feature of this study is that the data of the case study is focused only on one point in time and is in fact an image of a phenomenon. The present study was conducted in two phases: review of literature and expert poll by Delphi method. At first, the variables affecting agility and organizational entrepreneurship were extracted by reviewing related literature. Then the extracted components were finalized by Delphi method following the consensus of experts. When using the Delphi method to obtain the opinions of experts and specialists, it is necessary that the initial model (conceptual model) to be edited first. Based on the existing experiences in this field and based on the review of previous studies in accordance with the content analysis technique, the most important factors, components, and indices of the research background were identified and determined, as well as a basic conceptual model was proposed and presented in a questionnaire. Statistical population of the study included faculty members of Mashhad University of Medical Sciences, Mashhad Azad University, and Neyshabur Azad University. The research sample was selected purposefully based on inclusion criteria and data saturation. Finally, 20 eligible individuals were interviewed of whom, 14 were faculty members of Mashhad college of Health, Mashhad Azad University and Neyshabur University and 6 were senior managers in Mashhad University of Medical Sciences. The criterion for entering the study was sufficient familiarity with the concepts of entrepreneurship and agility of the organization and having an educational and research background in the field of entrepreneurship and agility of the organization.

In the first stage of the study, variables affecting agility and organizational entrepreneurship were extracted from reviewing related literature. In the second stage, these variables were submitted to the Delphi panel as a questionnaire to reduce the effective variables from the experts' point of view. In the second stage, the questionnaire was sent to the members in order to analyze the qualitative content of variables and classify them into two groups of dimensions and components affecting agility and organizational entrepreneurship. In the third stage, these dimensions and components reached the consensus of experts as influential factors on organizational agility and entrepreneurship. Finally, after three rounds of Delphi expert opinion polls, the results showed the consensus.

The data collection tool was a questionnaire containing open-ended questions in the first round and in the second round there were closed-ended questions based on the designed initial model consisting of the main axes of goals, data sources, minimum data set, data collection and analysis method, and reporting. In the second-round of questionnaire onwards, each component was scored on a 5-point Likert scale (strongly agree: 4, agree: 3, average: 2, disagree: 1, and strongly disagree: 0). these questionnaires were verified by a researcher and their validity were

confirmed by experts through a review process.

The instrument for measuring data was a semi-structured questionnaire that its face validity was confirmed by academic experts. For Content Validity, Content Validity Ratio (CVR) was 0.78 and Content Validity Index (CVI) value was 0.75, respectively, which confirmed the content validity of the questionnaire. Also, its construct validity was confirmed by exploratory factor analysis. The reliability of the questionnaire was also calculated and confirmed by Cronbach's alpha 0.893.

In the first round, the questionnaire was sent to the experts via e-mail and simultaneously by phone call and if needed in person, the research explanations were provided to them. After two weeks, if the questionnaires were not returned, an e-mail was sent to the target individuals remind them. If no response was received within a week after the first reminder, necessary follow-up visits were made. Questionnaires that were not received until one week, after the in-person visit for the second reminder, were excluded from the study and they were substituted for purposeful sampling and continued until the desired outcome of this cycle was obtained.

For data analysis, Delphi first round content analysis was performed, and second round follow-up scores were calculated for each component based on a Likert scale of 0 to 4, (strongly agree: 4, agree: 3, average: 2, disagree: 1 and very disagree: 0). Finally, the results were analyzed using descriptive statistics. The criterion for acceptance of each component in the model was its placement in the quartile 3 to 4 (75 to 100%). If the consensus was on a component between the quarters 2 and 3 (50 to 75%), it was sent for re-polling in the next Delphi round. Components with a collective agreement between quartile zero to 2 (0 to 50%) were excluded from the model. At every stage of the Delphi method, the results of the previous step along with a questionnaire for that stage were sent to the experts.

RESULTS

The demographic characteristics of the interviewees at the Delphi stage are as follows.

A total of 376 variables were extracted from the literature review as influencing factors on organizational agility and entrepreneurship, of these 204 influenced entrepreneurship and 174 influenced organizational agility (supplement 1).

In the first stage, these variables were sent to the experts as a questionnaire and after summarizing the results of the experts' opinions, the variables affecting agility and

Table 1. Frequency distribution of interviewees' demographic variables

	Variable	Number	Percent
Gender	Female	7	%35
	Male	13	%65
Age	30-40 years	4	%20
	40-50 years	11	%55
	Over 50 years	5	%25

entrepreneurship were reduced to 157. After removing duplicates and based on abundance, 70 of them affect organizational agility (Table 2) and 87 variables affect entrepreneurship (Table 3).

Table 2. Dimensions and Components Affecting Organizational Agility					
Dimensions of agility	Abundance	Dimension / Component	Dimensions of agility	Abundance	Dimension / Component
Flexibility, flexibility of product and resource development, production and information technology and logistics and structures	12	Dimension	Prepared for change and evolution in the organization	1	Dimension
Speed and fast troubleshooting	6	Dimension	Centralized and collective planning	1	Component
Creating and shaping virtual partnerships and virtual business	2	Component	Continuous improvement	1	Component
Value human knowledge and skills	2	Component	electronic commerce	1	Component
responsiveness	3	Dimension	Technology	1	Dimension
Implement changes and manage change and risk	3	Dimension	Ability to acquire knowledge	1	Component
Transfer of value and values	2	Component	Empowerment	1	Component
Customer responsiveness and market sensitivity	2	Dimension	Communication agility	1	Dimension
Encourage learning from experience, growth and learning	2	Component	Strategy agility	1	Dimension
Willingness to outsource non-core activities	2	Component	People's agility	1	Dimension
Integrated information system and virtual information integration	2	Dimension	Agility of processes	1	Dimension
Merit	3	Dimension	Internal processes of the organization	1	Component
Collaboration and interaction	2	Dimension	Ability to participate	1	Dimension
Effectiveness	1	Dimension	Teamwork	1	Component
Decision-driven reforms	1	Component	Quality	1	Dimension
Organization-centered reforms (in hospital)	1	Component	Finance and Clients	1	Dimension
Document-centered reforms	1	Component	Simultaneous Engineering	1	Component
Process-centered reforms	1	Component	Reactivity	1	Dimension
Flexible and multi-skilled people	1	Component	Cost	1	Component
Process Integration and Performance Management	1	Dimension	Match time	1	Component

Table 3. The Frequency of Dimensions and Components Affecting Organizational Entrepreneurship					
Dimensions of Entrepreneurship	Abundance	Dimension / Component	Dimensions of Entrepreneurship	Abundance	Dimension / Component
Environment and relationship with environment	5	Dimension	Fostering the business concept	1	Component
Innovation, process innovation and product innovation	4	Dimension	Forming working teams	1	Component
Perception, evaluation and creation and exploitation of opportunity	4	Component	Technology matching	1	Dimension
Risk and risk taking	4	Dimension	effort and Perseverance	1	Component
Obtain the necessary resources and evaluate resources	4	Dimension	Success	1	Component

Table 3. Continued

Dimensions of Entrepreneurship	Abundance	Dimension / Component	Dimensions of Entrepreneurship	Abundance	Dimension / Component
Independence and relative independence	3	Dimension	Globalization	1	Component
Forward variables	1	Dimension	Cultural support	1	Component
Social economic conditions and exploitation of economic activities	3	Dimension	Creativity	1	Component
Entrepreneurial culture	2	Component	High growth	1	Component
Organizational acts	1	Component	Entrepreneur satisfaction	1	Component
flexibility	1	Dimension	Competition	1	Dimension
Motivation	2	Component	Government approaches and policies	1	Component
Behavior	1	Component	Entrepreneurial leadership	1	Component
Organization	2	Dimension	Human Capital	1	Dimension
Networking	2	Dimension	Entrepreneurial Project Support Policy	1	Component
Entrepreneurial activities and characteristics	2	Dimension	Determination	1	Component
Personality characteristics	2	Component	Cognitive element	1	Component
Financing and financial support	2	Component	Competitive Strategy Factors	1	Component
Bonus status	1	Component	Growth Factors	1	Dimension
Individual and individual attitudes	2	Component	Psychological factors	1	Dimension
innovation	1	Component	Personal factors	1	Dimension
Information and Electronic Entrepreneurship	1	Component	Sales agents	1	Component
Credibility of the organization	1	Component	Internal Capability Factors	1	Dimension
Believing in the sacred	1	Component	Production Related Factors	1	Dimension
Doing work with others	1	Component	Process	1	Component
Goals and Results	1	Dimension	Professional social activity	1	Component
Create value	1	Component	Opportunity to invest in opportunities	1	Component
Startup Skills	1	Component	Executive Management	1	Component
Job Skills and Entrepreneurship	1	Component	Rehabilitation variables	1	Dimension
Accelerating variables	1	Dimension			

In the second stage of Delphi, these variables were sent to the experts in a questionnaire for classification. The results of the organizational agility questionnaire resulted in 8 dimensions, while the entrepreneurship questionnaire resulted in 6 dimensions, and for organizational agility dimensions as well as entrepreneurship dimensions 27 and 39 components were identified respectively. (supplement2) These dimensions and components were re-submitted to the experts in the third stage questionnaire after being summarized and sorted in the form of questionnaires. The results of expert opinions were obtained in terms of dimensions and components affecting entrepreneurship and organizational agility. The criteria used to determine consensus were Delphi panel responses and homogeneity, use of Kendall's coefficient of concordance, or consensus scale. The results of Kendall's coefficient of agreement or coefficients for the identified dimensions and components were 0.81 in the second Delphi stage and 0.88 in the third

Delphi stage, indicating a strong and acceptable consensus among the panel members in relation to the dimensions and components of the research. Also, in order to confirm the findings of this study, the significance of each of the identified factors, components and indices and the results obtained from the third stage of Delphi technique were evaluated by means of statistical comparison with a constant number test (t-student test). In this test, Delphi panel members rating point of view for each variable was calculated and then their mean scores were compared with criterion 2. That is, it tests whether any of the identified factors, components, and indicators is above 2 or not. According to the above explanation and estimating the required parameters, as well as calculating the test statistic t_0 and then the P-value; the results showed that all the dimensions obtained from the third stage of Delphi technique were significant and only 3 components of 66 dimensions were not significant, so they were removed from the final model.

Table 4. T-student test for Significant Study of Delphi Panel Members' Agreement on Identified Factors on Organizational Agility

Dimensions affecting the agility of the organization	Distribution of relative frequency percentages of expert responses					result		
	Completely opposed	Against	Somewhat agree	agree on	totally agree	Mean± Standard deviation	P-value	
flexibility	% 0	% 0	% 0	% 4	96%	3/ 96 ± 0/21	0/000	Accept
Organizational Fluency	% 0	% 0	% 0	30%	70%	3/ 70 ± 0/47	0/000	Accept
Human Capital	% 0	% 0	% 0	30%	70%	3/ 70 ± 0/47	0/000	Accept
Organizational Agility	% 0	% 0	% 0	22%	78%	3/ 78 ± 0/42	0/000	Accept
change management	% 0	% 0	% 0	% 9	91%	3/ 91 ± 0/29	0/000	Accept
Information and Communication Technology	% 0	% 0	% 0	17%	83%	3/ 83 ± 0/39	0/000	Accept
performance management	% 0	% 0	% 0	19%	81%	3/77 ± 0.24	0/000	Accept
Continuous improvement	% 0	% 0	% 0	24%	76%	3.85 ± 0.33	0/000	Accept

Table 5. T-student test for Significant Assessment of Delphi Panel Members' Consent on Identified Factors on Organizational Entrepreneurship

Affecting Entrepreneurship Dimensions	Distribution of relative frequency percentages of expert responses					result		
	Completely opposed	Against	Somewhat agree	agree on	totally agree	Mean± Standard deviation	P-value	
Human Factors	% 0	% 0	% 0	% 4	96%	3/ 96 ± 0/21	0/000	Accept
Entrepreneurial culture	% 0	% 0	% 0	30%	70%	3/ 70 ± 0/47	0/000	Accept
Motivational factors	% 0	% 0	% 0	30%	70%	3/ 70 ± 0/47	0/000	Accept
Accelerating variables	% 0	% 0	% 0	22%	78%	3/ 78 ± 0/42	0/000	Accept
Information Technology	% 0	% 0	% 0	% 9	91%	3/ 91 ± 0/29	0/000	Accept
Rehabilitation variables	% 0	% 0	% 0	17%	83%	3/ 83 ± 0/39	0/000	Accept

The results reported in Tables 4 and 5 show that according to the calculated P-values, the null hypothesis or, in fact, the hypothesis of expert group members' disagreement with each of the factors identified as affecting entrepreneurship and agility has been rejected at the test error level. It can be concluded with 95% confidence that shows these factors are effective and significant on entrepreneurship and agility of the organization.

ANOVA test was used to determine whether each of the dimensions was of equal importance. Therefore, by ANOVA test, F-Fisher and P-value were calculated as 1.741 and 0.131, respectively. Therefore, the null hypothesis cannot be rejected (because $P - value = 0/125 > \alpha = 0/05$). Therefore, it can be stated with 95% confidence that from the experts' point of view, the degree of influence of the identified dimensions and components on organizational agility and entrepreneurship is the same or there is no significant difference between the importances of these factors. Therefore, according to the findings, the impact of every identified effective factor on organizational agility and

entrepreneurship is the same and none of them have preference or priority over the other ones.

DISCUSSION

The fast-changing world has brought new conditions and challenges to organizations. However, much evidence indicates that many organizations do not sufficiently utilize the internal potential of the organization to achieve their goals. Indeed, many of the internal potentials of the organizations have been idle due to the lack of innovative solutions. Such a scenario is more realistic and objective for government agencies. Therefore, organizational entrepreneurship can function as a tool to get out of the current situation.

On the other hand, in the competitive market, there is a pressing need to develop and improve the flexibility and accountability of the organization. Nowadays, many organizations and companies are facing increasingly secure and uncertainty competition which are aggravated by technological innovations, changing market environments,

and changing customer needs. This critical situation has led to major reforms in the organization's strategic outlook, business priorities, and revision of traditional and even relatively contemporary models.

In other words, past approaches and solutions have lost their ability and capability to dealing with organizational challenges and the external environment, or they may be replaced by new approaches and perspectives. One of the ways to respond these factors of organizational change is agility. Therefore, this study aimed to design an organizational entrepreneurship model with an agility approach.

A review of the literature on the movement of organizations toward entrepreneurship and agility shows that some researchers, as Ropke(13), Jacobs et al.(19), And Atzkowitz(2), have looked at entrepreneurial university from the perspective of entrepreneurial activities, and others as Goldman and Nieger (15) and Gonaskar (16) models have focused on the factors affecting organizational agility.

In line with the findings of the present study, different studies have been carried out inside and outside the country such as the study done by Lee et al who Investigated the relationship between agility of the organization, which is a complex and multidimensional concept, with entrepreneurship; however, the results of their research showed that the more agile organizational structure in organizations, the more capable they are in supporting creative and entrepreneurial approaches. According to these researchers, organizational agility is one of the basic prerequisites for moving to entrepreneurship (26).

The results of the research by Yaghoubi et al. Showed that the main issues leading to agility outcomes at Entrepreneurial University include the agility capabilities needed to enrich, satisfy customers, and provide solutions which can be witnessed through agility drivers and agility enablers at Entrepreneur University (27). Also, Amirnejad and his research colleagues, who were among the staff of one of the country's aviation organizations, concluded that there was a significant relationship between entrepreneurship and agility of the organization (28).

Although various research have been conducted on entrepreneurial or agile universities and their constituent factors and elements, however, can rarely be found to cohesively identify the factors affecting entrepreneurship and agility in medical universities of Iran, this was accomplished in the present study. It should be noted that the importance of moving towards entrepreneurial and agile universities in terms of educational deputy of the Ministry of Health is a

fundamental goal and value of the whole package of evolution and innovation in medical science education based on higher education in the country. Entrepreneurship and agility in the health field will transform the cost economy into wealth, expand the country's export of medical services and products, enhance interactions of different governments in various fields, including valuation and reduce consumerism, and create thousands of job opportunities for health graduates.

The results showed that there are many different factors affecting entrepreneurship and agility of the organization, including factors affecting organizational agility, flexibility, organizational culture, human capital, organizational agility, change management, information and communication technology.

In addition, factors influencing entrepreneurship include human factors, entrepreneurship culture, motivational factors, accelerating variables, information technologies, and rehabilitation variables. It seems that, given the need for current organizations to move toward entrepreneurship and agility management, managers with a strong emphasis on their effective dimensions, providing the resources, facilities, and arrangements needed to achieve these dimensions can bring significant benefits to organization. It is hoped that the results of this research will help other researchers to develop and improve entrepreneurship and agility of organizations.

Due to the importance of selecting experts in the field of entrepreneurship and agility of the organization and their high occupation, responses were usually delayed and after repeated follow-up of the researcher, they which resulted in time consuming data gathering process.

Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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SUPPLEMENTS

Supplement 1

Questionnaire 1. Variables affecting entrepreneurship and agility of the organization					
Variable name	Dimensions	Yes	No	Components	Yes No
Agility	flexibility (24),(8),(7),(6)			Gosh Product Development(2000)	
				Wonder Information Technology(2014)	
				Ghosh Logistics (2000)	
				Wonder Structures(2014)	
	Organizational Culture (7)			Gosh Sources (2000)	
				The spirit of the work team Ganaskaran(1998)	
				Organizational values of Vander(2014)	
				Transfer the value of Goldman (1995)	
				Encouraging and Learning from the Adel Azar Experience(2011)	
				Encourage growth and learning of Mehraban(2014)	
	Human Capital (7)			Spirit of working and interacting of Vander (2014)	
				The man deserves Vander(2014)	
				Flexible People of Ganaskaran(1998)	
				The multi- skilled of Ganaskaran(1998)	
				The ability to acquire the knowledge of Adel Azar (2011)	
				Empowerment of the people of Ganaskaran (1998)	
				The ability to participate in the Ganaskaran(1998)	
	Agility of the organization (10)			Exploring Human Knowledge and Skills Goldman(1995)	
				Agility Strategy of Meredith and Francis (2000)	
				Persons Agility of Meredith and Francis(2000)	
				Meredith and Francis Communication Agility(2000)	
	Change Management (15),(8)			Agility process of Meredith and Francis (2000)	
				Reaction of Charles (2010)	
				Preparing for Transformation the Goldman (1995)	
				Implementation of changes Adel Azar(2011)	
				Match to Time from Ilvia (2018)	
	Technology ,information and communication (18)			Simultaneous Engineering from Ganaskaran (1998)	
				Ganaskaran Integrated Information System(1998)	
				Agrawal Virtual Integration of Information (2007)	
				Business Electronics of Ganaskaran (1998)	
				Creating and Forming Virtual Enterprises from Goldman(1995)	
	Performance Management (9)			Agrawal Process Integration(2007)	
				The Quality of Ganaskaran (1998)	
				Effects of Charles(2010)	
				Ability to outsource non-core activities of Adel Azar(2011)	
				Mehraban finance and customers(2014)	
				Program planning and centralized collective Agrawal(2007)	
				Solving Problems Quickly from Adel Azar(2011)	
	Continuous improvement (16)			Accountability from Ilvia(2018) Thurong Lane (2005) Agrawal (2007)	
				The process of internal organization from Mehraban(2014)	
				Reform document- centric Bruyts(2013)	
				Organization - Based Reforms from Bruyts(2013)	
			Decision - Making Reforms by Bruyts (2013)		
		Process Reforms by Bruyts (2013)			

Factors Affecting Entrepreneurship and Agility

Questionnaire 1. Continued					
Variable name	Dimensions	Yes	No	Components	Yes No
Organizational Entrepreneurship	Innovation (22),(14),(17)			The Gartner Process(1985)	
				Productby Asrab (2017)	
	Human Factors (25),(14)			Features personality Timmons (1985) Chel and haversian (1988)	
				The Will by Robbins and Colter (1996)	
				Tawfik seeking by Hysrych(1985)	
				The Psychological Factors of William Bygrew(1999)	
				The Cognitive Element of Chel & Havers(1988)	
				Behavior of the Timons(1982)	
				Individual Attitude Hill(2003)	
				Effort and perseverance Hysrych(1985)	
				Morris Individual Growth Factors(2005)	
				Robbins & Colter's Creativity(1996)	
				Entrepreneurial Skills for Entrepreneurship in Niwace and Fogen(1994)	
		Entrepreneurial culture (21)			Belief in Values Robbins and Colter (1996)
				Creating Value by Saeed Kia(2009)	
				Risk and Risk Acceptance by Hysrich (1985) Shapio(1975)	
				Taking advantage of the opportunities Hysrych (1985)	
				Network of Asrab(2017) Rach Pot(2011)	
				Doing Work With Others Chell & Havers (1988)	
	Motivational factors (23),(19)			The Motivation of the Timons (1982) Robbins and Colter (1996)	
				Hill's Bonus Status(2003)	
				Goals and Results by Timmons(1982)	
	Accelerating variables of entrepreneurship (25)			The Environment and the Relationship to the Environment by William Bay Grave(1999) Rach Pott (2011) Gartner (1985) Rasmus(2018)	
				Support cultural by Asrab(2017)	
			Morris Competitive Strategy(2005)		
			Policy support projects of entrepreneurship Najim (2013)		
			The Approaches and Policies of the Government by Niawace and Fogel (1994)		
			Taking advantage of the activities of the Economic by Steven Sun(1989)		
			Economic and Social Conditions of the Environment Niawace and Fogel (1994)		
			Competitive Asrab(2017)		
			Support financial by Niawace and Fogel (1994)		
			Shapiro Initiative(1975)		
Technology Information (12)			startup Skills by Asrab(2017)		
			Najim Electronic Entrepreneurship (2013)		
			Globalization of Asrab (2017)		
Organizational Rehabilitation Variables (24)			Adapting Technology with Changes by Asrab (2017)		
			The ability of the internal organization of Mauritius (2005)		
			Factors Related to Service from Hill (2003)		
			Growth of Organization by Asrab(2017)		
			Entrepreneurial Leadership by Hill(2003)		
			Independence in the Works of Shapiro (1975) , Hystrich (1985) , Robbins and Colter(1996)		
			Providing financiaby by Asrab(2017)		
			The power of capital investment opportunities of Chel and Haworth(1988)		
		Fostering the business concept by Steven Sun(1989)			
		Providing resources of Steven Sun (1989)Rachpot(2011)			
		Flexibility of Hill(2003)			

Supplement 2

Questionnaire 2. Dimensions and Components Affecting Entrepreneurship and Agility of the Organization							
Variable	Dimensions	Components	totally agree	agree on	No comments	Against	Completely opposed
Agility	flexibility	Development of Product					
		Information Technology					
		Sources					
		The spirit of the work team					
		The value of the enterprise					
		Transfer values					
		Encourage growth and learning					
	Organizational Culture	Working spirit and interaction					
	Human Capital	Worthy manpower					
		Multi -skilled people					
		Empowering staff					
		Ability to participate in affairs					
		Placing value on the knowledge and skills of human					
	Agility	Organizational Agility	Communication agility				
Agility process							
change management		Readiness for change and transformation					
		Implementation of changes					
Information and Communication Technology		Compliance with time					
		System Information Integration					
performance management		Process integrity					
		Quality					
		Effectiveness					
		The out- sourcing activities in secondary					
		Centralized and collective planning					
Continuous improvement		Quickly solve problems					
		responsiveness					
	Decision -driven reforms						
Entrepreneurship Human Factors	personality Features						
	Determination						
	Success						
	factors Psychological						
	perseverance and Effort						
	Creativity						
	entrepreneurship Job Skills						

Questionnaire 2. Continued							
Variable	Dimensions	Components	totally agree	agree on	No comments	Against Completely opposed	
Entrepreneurship	Entrepreneurial Culture	values in Belief					
		taking- risk and of risk Acceptance					
		opportunities of advantage Taking					
		Networking					
		others with work Doing					
	Motivational factors	team the work The spirit of					
		people Motivation					
		status Bonus					
		Results and Goals					
		environment with relationship and Environment					
Accelerating variables	Accelerating variables	support Cultural					
		entrepreneurship of project the support for Policy					
		the government of policies and Approaches					
		Taking Advantages of economic activities					
		environment of the conditions social and Economic					
	Information Technology	Competition					
		support Financial					
		innovation					
		startup Skills					
		Entrepreneurship Electronic					
Organizational Rehabilitation Variables	Information Technology	Globalization					
		change to technology Adapting					
		Internal organization capabilities					
		service with associated Factors					
		organization of the growth High					
	Organizational Rehabilitation Variables	leadership Entrepreneurial					
		works in the Independence					
		financial Providing					
		The Power of Investing in Opportunities					
		Fostering the business concept					
Organizational Rehabilitation Variables	resources Providing						
	Flexibility						