

Original Article

Factors Affecting and Inhibiting Scientific Productivity from the Viewpoint of Faculty Members of Kermanshah University of Medical Sciences

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Abstract

Introduction: One of the main indicators in the scientific development of many countries is their scientific production. In this regard, universities and faculty members, as the most critical factors in research and scientific areas, play the most significant role.

Methods: The current study attempts to identify the critical factors and obstacles involved in the production of science at Kermanshah University of Medical Sciences (KUMS) from the viewpoint of the faculty members. The study method comprised of a descriptive-survey and the statistical community composed of 250 faculty members of KUMS. Two checklists of contributing and inhibiting factors were distributed among the active and semi-active university faculty members. Each checklist consisted of 5 sections: research system, administrative factors, financial and logistic procedures, researchers and research culture. Mann-Whitney U non-parametric test was used for data analysis.

Results: The faculty members regarded that attaching importance to research priorities in approving research projects, presence of resources and databases and easy access to them, accessibility of research facilities and equipment, reducing the activity of faculty members in the training and treatment domain, and existence of a collaborative and inter-sectorial atmosphere are the contributing factors in science production. In addition, factors such as lack of trained manpower as research assistants, absence of research projects based on the society requirements, lack of appropriate instruments and low research awards and budget, poor command of English language on the part of researchers, and lack of culture of transferring and presenting the prominent researchers' experiences to the young researchers were determined as the inhibiting factors in the production of science.

Conclusion: The results showed that except for two factors, the presence of resources and databases and easy access to them and positive attitude of executive managers toward the production of research, there was no significant difference between the opinion of the active and semi-active faculty members.

Keywords: Production of science, Influencing factors, Obstacles, Faculty members

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Introduction

The significance of research in development of community is evident. The growth and development of many countries in modern world is due to expansion, enriching and development of research (1). Nowadays, the production of knowledge is the main factor of survival, independence and progress of countries and is considered as an important tool in various fields of global competition. Moreover, benefiting from the resources and expertise as well as research facilities, universities and higher education centers are the most influential drivers of knowledge production.

Production of knowledge at the core of university can be accomplished by the unanimous efforts of university faculty members and students as well as the scientific and research centers. In fact, the main burden of production of knowledge is on the shoulders of the scientific and academic system in Iran which can be achieved through extensive and participatory activities of the faculty members and graduate students. Under this condition, the development of Iranian science and technology is an achievable objective.

The most reasonable and reliable measure to evaluate the countries' rank and status of science is the production of knowledge. Some experts define the production of knowledge as the number of scientific articles published in international journals, due to the fact that the publication rate benefits from accurate and clear calculations and is free from any manipulation (2). Based on basic national and international data, the scientific production of Iranian researchers in recent years has been increasing (3).

Despite the presence of capacities, talents and valuable intellectual capital in Iranian universities, implementation and development of graduate programs, university rankings, different budgets allocated to various universities, and increasing attention of universities to industry, evidence indicates that the status of research is not good in Iran. With more active participation of powerful faculty members in research areas, it is possible to achieve a striking and increasing progress in the scientific rank of universities.

The present study investigates the opinions of the faculty members of Kermanshah University of Medical Sciences (KUMS), in two active and semi-active groups, on the factors contributing to and inhibiting participation in scientific research activities. It seems that identification of these factors and intervention of university administrative

authorities in the areas flexible enough to change can promote the status of university in Iran research system to the top ranking universities.

Methods

The current study is an applied (development) research which is conducted in a descriptive-survey manner. The statistical population included all the faculty members (250) of KUMS. In this study, the sample size was calculated to be 96 through cluster sampling method using the formula "sample size calculation for a proportion of the population".

Since 80% of all faculty members in 2012 were able to achieve promotion, 80% of the sample size, i.e. 78 active and 18 semi-active faculty members, were randomly allocated in two clusters. In this study, the data collection tools were two researcher-made checklists: one for the contributing factors and the other for the inhibiting factors, which were given to the two groups of active and semi-active faculty members.

Each checklist consisted of five sections: the factors related to research system, the factors related to researchers themselves, legal, financial and administrative procedures, the factors related to research culture and free presentation of theory; the latter was related to the factors considered by the faculty members but not included in the list. In this study, as the checklist was researcher-made, its validity was assessed by a number of specialists in the field of research at KUMS, including the vice chancellor of research and a number of experts (faculty members and experts of research department). Having allied their opinions, the validity of the checklist was confirmed. First, the data were fed into SPSS-22 software and the descriptive results for qualitative variables were presented as frequencies and percentages in tables and graphs, and for quantitative variables the mean and standard deviation were presented. Since the data were ordinal, with the precondition of a large number of categories, Mann-Whitney U non-parametric test, which focuses on the data median, was used to compare the two independent groups.

Results

As shown in Table 1, there were 78 participants in this study, 66 of whom (84.6%) were active faculty members and 12 (15.4%) were semi-active faculty members. Out of 78 participants in this study, 60 (76.9%) were male and 18 (23.1%) were female.

Table 1. The frequency distribution of faculty members based on the extent of activity and gender

	Category	Frequency	Percent
Activity	Semi-active	12	15.4
	Active	66	84.6
Gender	Male	60	76.9
	Female	18	23.1

The obtained results indicated that from the viewpoint of the faculty members on the research system, most of them (21.2%) regarded attaching importance to research priorities in approving research projects as the first effective priority in the production of science. As for the administrative factors, the faculty members regarded financial and logistic factors (18.02%), factors associated

with databases and easy access to these resources and access to research facilities and equipment as the most effective priorities. Regarding the researchers domain, 28.8% of the faculty members considered reduction in the faculty members' activity in training and treatment area as the first and most effective priority (Table 2).

Table 2. The distribution of main factors contributing to the production of knowledge from the perspective of faculty members of KUMS

Category		Frequency (Percent)
The research system	Attaching importance to the research priorities system in the approval of research projects	17(21.2)
	Managers' use of the results of research in making decisions	8(10.6)
	Close and effective relationship between research centers and universities	11(13.6)
	Association and the effective interaction between university and industry	7(9.1)
	Training empowered researchers as research assistants	9(12.1)
	The existence of sufficient space for national and international cooperation	7(9.1)
	Highlighting the importance of the role of student research	5(6.1)
	Incentive policies in the university and the relevant ministry	8(10.6)
	The availability of facilities and a suitable context for inclusion of the achievements of researchers into the area of commercialization	5(6.1)
	Terms of administrative, financial and logistic	Conditions and facilities for the use of equipment in other centers affiliated to the university
Resources and databases, and easy access to these resources		14(18.2)
Availability of equipment, facilities and research materials		14(18.2)
Facilitating the approval process for research projects		12(15.2)
Formalities required for the purchase of research materials and equipment		7(9.1)
Shortening administrative and temporal process from presentation of articles to publication		7(9.1)
Increased funding for research activities and wages		13(16.7)
Researchers characteristics	Researchers' sufficient familiarity with English language	20(25.8)
	The presence of statistics consultants during the study	7(9.1)
	Reducing the activity of faculty members in the education and treatment sectors	22(28.8)
	Promotion of the impact factors of the published articles in the promotion by laws	13(16.7)
	The presence of the skilled and trained consultants to assist researchers in writing articles	7(9.1)
	Researchers' familiarity with the use of electronic information resources	7(9.1)
The research culture	Sufficient space for collaboration and inter-sectorial coordination	20(25.8)
	Executives' positive attitude to the benefits of research	13(16.7)
	The interaction between basic and clinical faculty in conducting joint teamwork	13(16.7)
	Maintaining welfare and social position of researchers and paying practical respect to them	8(10.6)
	Properly conveying the experience of distinguished researchers to young researchers	8(10.6)
	Defining the real position of researchers and research in society	17(21.2)

Further, for the research culture dimension, 25.8% of the faculty members regarded the existence of a collaborative and inter-sectorial atmosphere as the first and most effective priority in the production of science (Table 2).

As for the research system, most of the faculty members (25%) regarded the absence of research projects based on the society requirements and insufficient trained research assistants as the most important obstacle to the production of science. With regard to administrative supportive, and

financial procedures, 25% of the faculty members considered lack of appropriate instruments and impossibility to do study and low budget for research as the most important obstacles. Considering the researcher factors, 33.3% regarded researchers' lack of English language command as the most important obstacle. For research culture, the faculty members (41.7%) considered lack of the culture of transferring and presenting the researchers' experiences as the most important obstacle (Table 3).

Table 3. The distribution of main barriers to the production of knowledge from the perspective of faculty members of KUMS

Category	Frequency (Percent)	
The research system	Lack of research plans based on the needs and priorities of society	19(25)
	Management's inappropriate use of research findings in management decision	6(8.3)
	Lack of effective communication between research centers and universities	6(8.3)
	Lack of effective communication between university and industry in using research results	13(16.7)
	Lack of adequate trained manpower as a research assistant	19(25)
	Lack of appropriate space for national and international cooperation	13(16.7)
	Unimportant role of student research and lack of attention to the potential of this group	6(8.3)
	Lack of incentive policies in universities and industry	6(8.3)
	Weakness in commercializing the achievements of investigations	6(8.3)
The terms of administrative, financial and logistic	Lack of research facilities and tools	19(25)
	Lack of resources and databases in an extensive form of these resources	13(16.7)
	Lack of equipment usage in other departments and university centers	6(8.3)
	Long process of the approval of research projects	6(8.3)
	Lengthy procedures and procurement to order and provide materials and equipment needed	13(16.7)
	Long time interval between the presentations of the article to its publication in Journal	13(16.7)
The researchers characteristics	Insufficient research budget and wages	19(25)
	Researchers' insufficient familiarity and mastery of English language	26(33.3)
	Lack of easy access to research methodology and statistics consultants during the study	0(0)
	Involvement of faculty members and lecturers in the education and health sectors	13(16.7)
	Inadequacy of points allocated to articles in promotion by law	13(16.7)
	Lack of sufficient familiarity of researchers with the methods to write an article	19(25)
The research culture	Lack of familiarity and mastery of researchers to use electronic resources	6(8.3)
	Lack of teamwork spirit	19(25)
	The absence of a positive attitude in the process of research executives	0(0)
	Lack of interaction and relationship between basic and clinical faculties in conducting joint teamwork	13(16.7)
	Lack of respect to the rights of authors and paying reverence to them in practice	6(8.3)
	Lack of culture of presentation and exchanging experiences to young researchers properly	33(41.7)
Ambiguity of the actual place of study and researcher at society	6(8.3)	

The results of Mann-Whitney U non-parametric test showed no statistically significant difference between the opinions of active and semi-active university faculty members except for two factors, namely: the presence of resources and databases and easy access to them ($P < 0.001$), and the presence of positive attitude of the Chief Executive Officers, CEOs, toward the production of research ($P = 0.023$).

Discussion

The factors contributing to and impeding the production of knowledge were identified and discussed based on the opinions of the faculty members of KUMS.

In the area of research system, 21.2% of the faculty members regarded the importance of the research

priorities system in the approval of research projects as the first priority with a significant impact on the development of knowledge production. Also, close and effective relationship among the research centers and universities (13.6%) and training powerful researchers as research assistants (12.1%) were recognized as the second and third priorities in this domain. Regarding the barriers to knowledge production, lack of research on the basis of needs and priorities of the community (25%) and lack of adequate trained manpower as research assistants (25%) were jointly selected as the first obstacles, and two factors, namely the lack of effective communication between the university and industry in the use of research results (16.7%) and lack of appropriate space for national and international cooperation (16.7%) were identified as the second priorities.

Ghoorchian et al. (4) considered diffusion and institutionalization of research in the education and management system of a country, especially in primary school education, as well as dissemination and promotion of self-regulation in academic centers as the most effective strategies for research development. Shortage of manpower and efficient research assistants were problems that Karimian et al. (5) reported as the second barrier to performing research. It seems that universities should adopt measures to educate and employ research assistants and to meet scientific needs. Jamalpour (6), in a study to identify barriers of research and innovation (2003) focused on some issues such as aging and inefficiency of administrative system in various executive and scientific sectors, lack of proper management and research plan in scientific and research centers, the gap between research centers and executive agencies, and lack of appropriate structures for collaboration between industry and universities. According to the research carried out by Schiller et al. (7), bureaucracy is a barrier to the relationship between universities and industries. Lack of communication and interaction between universities and industries has not provided the ground for supporting the research and encouragement of researchers to engage in research. Some studies have evaluated lack of proper planning (8, 9), lack of organizations' cooperation in providing information (10), lack of inter-sectorial cooperation (11), lack of application of research results (12, 13), and so on. Bland & Bergquist (14) found that management factors such as program management and clear objectives in organizations directly influence the research productivity. Dunn et al. (15) focused on the greatest obstacles from the perspective of nurses in the area of institutional barriers. In the researches by Parahoo (16) and Kuuppelomäki & Tuomi (17), lack of adequate support from managers and researchers has been stated as the main obstacle to the application of research findings.

Regarding administrative, financial, and logistic procedures, the present study identified resources and databases, and easy access to these resources (18.2%) and availability of equipment, facilities and research materials (18.2%) as the first priorities. Also, increasing funding for research activities and wages (16.7%) was chosen by the faculty members as the second priority, indicating the significance and position of this factor. In addition, conditions and facilities for the use of equipment in other centers affiliated to the university (15.2%) and facilitating the approval process for research projects (15.2%) were identified as the third priorities in this category. In this domain, barriers to the production of knowledge were prioritized. Lack of research facilities and tools (25%) and insufficient research budget and wages for research (25%) were recognized as the most important priorities.

The results of the study by Jafari et al. (18), Corwin & Louis (19) and Hemsley-Brown (20) identified some factors such as the absence of databases, lack of coordination of research activities with development programs and policies, and lack of research-based policy-making as the major problems of developing countries. The research by Parahoo (16), Majumder (21) and Sumathipala et al. (22) addressed lack of research equipment and facilities, little funding to equip, enrich and update the library, and lack of research materials and opportunities. In particular, the significant contribution of research was found to be allocated to applied, experimental, and empirical domains that required providing laboratory materials, medical equipment, laboratory animals, as well as providing suitable conditions for maintaining them. Financing and provision of necessary equipment and facilities were reported to be essential for medical research. In addition, taking advantage of the skilled research manpower to enable efficient utilization of the existing equipment and technology was sometimes viewed to be more important than the supply of resources. Sereshti et al. (23), Mehdi (24), Zare Ahmadabadi et al. (25), and Barnes et al. (26) reported the following factors as the barriers to research and knowledge development: stringent administrative regulations on implementation of research, lack of application of research findings, little attention to the use of research results in policy-making decisions, lack of evaluation criteria for measuring and monitoring the research activities, insufficient private sector investment in research, inefficient management of research organizations, lack of private sector's participation in and support of scientific activities and lack of developed structures in universities to manage and administer the results of research. Jamalpour (6), in a study to identify barriers to research and innovation (2004), considered lack of funds allocated to research and development and lack of proper use of funds allocated to research as

challenges to knowledge development and production. Rherrad (27) showed that adequate fund for the researchers' knowledge production could be one of the contributing factors. Prosperity and development of research practices in order to produce knowledge was found to be linked to the budget to a large extent. There is no doubt that despite the best scientific policy, faculty members, and researchers, there would not be the possibility of high-level academic work without adequate funding.

Concerning the factors relating to the researchers, the faculty members of KUMS regarded reduction in the activity of faculty members in education and training sectors (28.8%) as the first priority in the production of knowledge. Moreover, the presence of experienced researchers with sufficient familiarity with English language (25.8%) and promotion of the impact factors of the published articles in the promotion by law (16.7%) were chosen as the second and third priorities, respectively. Regarding the priorities of barriers related to researchers, the first priority was lack of sufficient understanding and mastery of English language by the researchers (33.3%). In addition, lack of sufficient familiarity of researchers with the methods to write an article (25%) was selected as the second priority. Involvement of professors and lecturers in the education and health sectors (16.7%) and inadequacy of points allocated to articles in promotion by law (16.7%) were recognized as third priorities.

High number of teaching hours and too many educational activities were among the factors influencing the scientific and research activities. The results of ANOVA indicated that the faculty members who taught more than the required credits during a semester produced less scientific output than the rest of the colleagues. This impact was confirmed in the works of Kaya & Weber (28). Clearly, excessive concentration on the educational activities and communication with students eliminates the opportunities for doing research. Sadeghi (8), Bakrani (9), Aminiaei (10), Sereshti et al. (13) and Zohour & Fekri (29) showed that lack of knowledge about scientific research methods, lack of familiarity with statistical methods, lack of proficiency in foreign languages, and etc. were some of the scientific problems of researchers. Concerning professional obstacles, the results of the studies by Valizadeh et al. (30), and Farmanbar & Asgari (31) were in line with the findings of the present study, showing that the faculty members regarded high loads of health and treatment activities and insufficient time for study as the major obstacles in medical research.

In the last part of the research, namely research culture, the study sample regarded the most effective factor or the first priority as sufficient space for inter-sectorial and

group cooperation (25.8%). The members also selected defining the real position of researchers and research in society (21.2%) as the second priority. Finally, executives' positive attitude to the benefits of research (16.7%) and the interaction between basic and clinical faculties in conducting joint teamwork (16.7%) were considered as the third priorities. The most important barriers identified in this section were lack of the culture of presenting and transferring experiences to young researchers properly (41.7%), lack of teamwork spirit (25%), and lack of interaction and relationship between basic and clinical faculties in conducting joint teamwork (16.7%).

Aminiaei (10), Tajari (11) and Iman (32) also highlighted the influence of cultural and social barriers on the research activities from the perspective of the faculty members. In a study by Shamai & Kfir (33), cultural barriers of research in the teacher training universities were addressed. In a comparative study on the number of medical articles in different countries, Sumathipala et al. (22) considered cultural barriers of research as one of the problems of knowledge production in Asian countries. Apparently, if there are good conditions, people will be more inclined to do teamwork and inter-disciplinary activities. Further, the researchers' disappointment with research activities is mostly due to lack of training, experience, and skills required for team work, which should be promoted and expanded in educational organizations. Social and cultural barriers as another hurdle to research activities was confirmed by the university faculty members. The critical role of taking advantage of the relative well-being and good living conditions to address research activities has been highlighted in a study by Mohammadi (34). Based on the results of a study by Soleymani & Shokohi (35), scholarly communication is one of the most important factors involved in the production of knowledge. Scientific communications provide people with different perspectives.

Conclusion

There were no significant differences between the main factors and obstacles to the production of science from the viewpoint of active and semi-active faculty members except for two factors: the existing of resources and databases and easy access to these resources and positive attitude of executive managers to the production of research.

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References

1. Paryad R. Structural barriers to research among the faculty members of departments of human sciences at universities of Isfahan and western Iran. Conference Proceedings on Higher Education and Sustainable Development. 2004; 2: 233-258. [Persian]
2. Shafieezadeh H. The pathology of science production in Iran: Challenges to science production. Tehran: Strategic Research Center Publication. 2009; 34: 50-75. [Persian]
3. Ghanei Rad MA, Tolouei A, Khosrow-Khavar F. Factors, motives and challenges to knowledge production among scientific elites. Journal of Science & Technology Policy. 2009; 1(2): 71-77. [Persian]
4. Ghoorchian NGh, Arasteh HR, Jafari P. Pathology of barriers to research activities in Iran. Encyclopedia of Higher Education. Tehran: The Great Persian Foundation Board. 2004; 1: 4-8. [Persian]
5. Karimian Z, Sabbaghian Z, Saleh Sedghpour B. Study of obstacles and challenges of research and knowledge creation in universities of medical sciences. Journal of Higher Education in Iran. 2011; 3(4): 35-63. [Persian]
6. Jamalpour R. Challenges to knowledge generation as an introduction to the accomplishment of software movement to achieve sustainable development. 1th Congress of Movement of Knowledge, to Be Held Software Movement. Tehran: Islamic Azad University. 2006: 208-241. [Persian]
7. Schiller D, Mildahn B, Revilla Diez J, Schatzl L. Barriers against the transfer of knowledge between universities and the industry in newly-industrialised countries - An analysis of the regional innovation system of Bangkok. ERSA Conference Papers, European Regional Science Association. 2006. Available from: <http://www-sre.wu-wien.ac.at/ersa/ersaconfs/ersa06/-papers/882.pdf>
8. Sadeghi A. A study of research problems in disciplines of humanities from the viewpoint of faculty members of schools of humanities of University of Isfahan (Dissertation). Faculty of Education and Psychology, University of Isfahan; Iran, 1992. [Persian]
9. Bakrani F. A study of the faculty members' attitude toward the hurdles to the development of educational activities (Dissertation). Faculty of Education and Psychology, Allameh Tabataba'i University; Iran, 1994. [Persian]
10. Aminiaei M. An investigation of the reasons of human and behavioral sciences professors' lack of tendency to research in Iran. New Review of Research at Universities and Research Centers of Iran. Tehran: Center of Information and Documentation. 1999; (7)4. [Persian]
11. Tajari M. A study of barriers to research activities at humanities universities at Tehran from the perspective of the faculty members (Dissertation). Faculty of Education and Psychology, University of Shahid Beheshti; Tehran, Iran, 2003. [Persian]
12. Dadkhah B, Mohammadi M, Poornaseri S, Mozaffari N, Adham D. View of Ardabil province universities scientific members' about research and its limitations. Journal of Ardabil University of Medical Sciences. 2008; 8(1): 37-44. [Persian]
13. Sereshti M, Kazemian A, Daris F. Research barriers from the viewpoint of faculty members and employees of Shahrekord University of Medical Sciences. Educ Strategy Med Sci. 2010; 3(2): 51-57. Available from: <http://www.edcbmj.ir/article-1-71-fa.html> [Persian]
14. Bland CJ, Bergquist WH. The vitality of senior faculty members. Snow on the roof-fire in the furnace. ERIC digest. ERIC Clearinghouse on Higher Education, Washington DC. 1997; 25(7): 1-3.
15. Dunn V, Crichton N, Roe B, Seers K, Williams K. Using research for practice: A UK experience of the BARRIERS Scale. J Adv Nurs. 1997; 26(6): 1203-1210.
16. Parahoo K. Barriers to, and facilitators of, research utilization among nurses in Northern Ireland. J Adv Nurs. 2000; 30(1): 89-98.
17. Kuuppelomäki M, Tuomi J. Finnish nurses' views on their research activities. J Clin Nurs. 2003; 12(4): 589-600.
18. Jafari H, Yaghoobi T, Heydari J, Ismaeili R, Hekmat Ara M, Ataei M. A survey of faculty members of Mazandaran University of Medical Sciences viewpoints on preventing internal and external factors affecting research by faculty members of the university in 2000. Shakiba Quarterly. 2005; 4(6-7): 13-20. Available from: <http://www.magiran.com/magtoc.asp?mgID=2859&Number=7> [Persian]
19. Corwin RG, Louis KS. Organizational barriers to the utilization of research. Administrative Science Quarterly. 1982; 27(4): 623-640.

20. Hemsley-Brown J. Facilitating research utilisation: A cross-sector review of research evidence. *International Journal of Public Sector Management*. 2004; 17(6): 534-552.
21. Majumder MA. Issues and priorities of medical education research in Asia. *Ann Acad Med Singapore*. 2004; 33(2): 257-263.
22. Sumathipala A, Siribaddana S, Patel V. Under-representation of developing countries in research literature: Ethical issues arising from a survey of five leading medical Journals. *BMC Medical Ethics*. 2004; 5: 1.
23. Sereshti M, Kazemian A, Daris F. Research barriers from the viewpoint of faculty members and employees of Shahrekord University of Medical Sciences. *Educational Strategies*. 2010; 3(2): 51-57. [Persian]
24. Mehdi R. An evaluation of knowledge production strategies in the Department of Engineering with an emphasis on Iran's 20-year vision plan (Dissertation). Shahid Beheshti University; Iran, 2010. [Persian]
25. Zare Ahmadabadi H, Mansouri H, Taheri Demneh M. Analysis of research problems in universities using TOPSIS technique, from the viewpoints of Yazd University faculty members. *Knowledge of Islamic Studies at the University*. 2009; 13(4(44)): 113-138. Available from: <http://www.magiran.com/magtoc.asp?mgID=1235&Number=44> [Persian]
26. Barnes T, Pashby I, Gibbons A. Effective university-industry interaction: A multi-case evaluation of collaborative R&D projects. *European Management Journal*. 2002; 20(3): 272-285.
27. Rherrad I. Effect of entrepreneurial behaviour on researchers' knowledge production: Evidence from Canadian universities. *Higher Education Quarterly*. 2009; 63(2): 160-176.
28. Kaya N, Weber MJ. Faculty research productivity: Gender and discipline differences. *Journal of Family and Consumer Sciences*. 2003; 95(4): 46-52.
29. Zohour AR, Fekri AR. Research barriers: A study of academic staff of the Iran University of Medical Sciences. *Payesh*. 2003; 2(2): 113-120. [Persian]
30. Valizadeh L, Zamanzadeh V, Fathi Azar A, Safaeian A. Barriers and facilitators of research utilization among nurses working in teaching hospitals in Tabriz. *Journal of Hayat*. 2002; 8(2): 32-41. [Persian]
31. Farmanbar R, Asgari F. Study of constraining factors of research from the viewpoint of faculty members in Guilan University of Medical Sciences. *Journal of Guilan University of Medical Sciences*. 2005; 14(54): 84-91. [Persian]
32. Iman MT. The ambiguity of the methodology and research constraints in Iran. *Collection of Articles from the 1st Seminar on Higher Education in Iran*. Allameh Tabataba'i University. 1998; 1: 508-538. [Persian]
33. Shamai S, Kfir D. Research activity and research culture in academic teacher' college in Israel. *Teaching in Higher Education*. 2002; 7(4): 397-410.
34. Mohammadi A. The effect of individual and organizational factors on academic activities in Iran (Dissertation). Tarbiat Modares University; Iran, 2005. [Persian]
35. Soleymani M, Shokohi A. The factors influencing the scientific productivity of the faculty members of the Islamic Azad University (Branch 8). *Research in Curriculum Planning*. 2008; 1(17&18): 119-146. Available from: <http://journals.khuisf.ac.ir/jsr-e/article-1-80-fa.html> [Persian]