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Original Article

Faculty Empowerment Pathways for Achieving Scientific Authority: A Qualitative Study at Babol University of Medical Sciences

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Abstract

Background: Developing faculty capacity is central to fostering institutional scientific authority and competitive advantage in modern medical universities.

Objectives: This study aimed to identify strategic pathways and operational requirements for faculty empowerment toward achieving scientific authority across institutional priority disciplines.

Methods: A qualitative study utilizing Braun and Clarke's six-phase thematic analysis was conducted in 2024 at Babol University of Medical Sciences. Purposive sampling with maximum variation yielded 17 participants, including clinical and basic sciences faculty, department chairs, and medical education specialists across eight strategic disciplines. Semi-structured, in-depth interviews were conducted, transcribed verbatim, and analyzed concurrently using MAXQDA 2020 until theoretical saturation was attained. Trustworthiness was ensured via Guba and Lincoln's framework.

Results: Data analysis generated 215 initial codes organized into 12 subthemes and five overarching themes: (1) enhancing professional and technological competencies, (2) strengthening supportive and bureaucratic infrastructure, (3) promoting individual and organizational excellence, (4) expanding global scientific networking and talent recruitment, and (5) formulating macro strategic policymaking and balanced evaluation systems.

Conclusion: Attaining scientific authority requires a systemic, multi-tier empowerment model that moves beyond individual teaching workshops to encompass institutional governance, internationalization, and policy-level evaluation reforms.

Keywords: Faculty Development; Academic Leadership; Institutional Excellence; Medical Education; Thematic Analysis; Scientific Authority

Background

Presently, nations are trying to keep up with the latest science and technology with a view toward promoting their own development and competitiveness in the global arena. The role of universities in this undertaking is significant. In Iran, the concept of scientific authority refers to the ability to lead in knowledge production while also becoming an internationally recognized scientific source of knowledge (1). Scientific authority does not only mean counting publications, but also involves investment in cultural, theoretical, and institutional development (2). The foundation of scientific authority lies in the empowerment of personnel (1).

Human resources empowerment means building the capabilities in employees so that they can offer added value while performing well with minor supervision (3). Even the most precise organizational plans, the most logical organizational structure, and the most sophisticated computer systems cannot guarantee organizational success. These plans, structures, and systems do not work on their own; they become effective once people implement and support them (4). Understanding personnel management is important for

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organizations including medical universities, since people are viewed as a key resource of sustainable competitive advantage nowadays. Organizations and universities do not compete by their products or services provided, but rather through their human resources (5). For universities and similar types of organizations, acquiring sustainable competitive advantage is critical for them to maintain their competitiveness (6). Competitive advantage consists of several elements or capabilities that give universities an opportunity to outperform their competitors in the respective field. In order to win the competition, an organization needs to manage its external reputation as well as internal capabilities. From the resource-based view, empowered teachers are strategic resources for the organization; this is because thanks to their knowledge, creativeness, and academic abilities they contribute to the knowledge generation and innovation that provide universities with sustainable competitive advantage. This strategy corresponds to the idea of empowerment which aims to develop the human resources. Empowerment is not only the inner motivation for the work but also the motivation to act (7). The study by Dabirian et al. (2020) intended to determine the factor structure and assess the internal consistency of the Scientific Authority Questionnaire among faculty members. Ultimately, three components were identified: i) "the challenge of linking science with production and industry", ii) "the challenge of enhancing capabilities and progress in sciences", and iii) "individual social and cultural challenges" (8). Elsewhere, Yazdani et al. (2022), in developing a strategic plan to achieve scientific authority, undertook three actions: drawing a timeline, developing a roadmap, and formulating a differentiated strategic plan (9). In this paper, focus is on disciplines possessing competitive advantages which are recognized through an organizational prioritization procedure. It takes into account strategic priorities determined in the Medical Education Transformation Documents of the Ministry of Health and Medical Education as well as the current capabilities, available resources, and opportunities for development of Babol University of Medical Sciences. These disciplines encompass the sectors where there is potential for scientific advancement, innovations, and greater institutional contributions, while the improvement of faculty personnel is essential to gain scientific authority.

Although these contributions have great significance, most of the current literature has mainly focused on developing strategic plans and frameworks or measuring scientific authority and faculty empowerment. Not much research has been undertaken on how faculty members, academic leaders, and experts in medical education understand ways to achieve scientific authority through empowering faculty members in the important academic fields. Further, there are no studies related to context-specific approaches, enablers, and organizational needs pertaining to faculty empowerment in medical universities. Filling this gap is critical in order to ensure that any developed policies for faculty development are based on data and also aligned with institutions' strategies as well as strengths. Thus, even though there is background information about scientific authority and faculty empowerment, understanding context-specific ways of faculty empowerment in competitive disciplines is very limited.

Objectives

This study explored the experts' opinions regarding the context of faculty empowerment for scientific authority.

Methods

This qualitative study was performed in 2024 and employed the content thematic analysis technique based on Braun and Clarke's model of six phases to examine the opinions of experts regarding faculty empowerment in relation to attaining scientific authority. The main focus of the study was made on eight types of disciplines which provide competitive advantage at Babol University of Medical Sciences. The classification of the disciplines took place in response to the institutional prioritization process which is in accordance with the strategic priorities of the Ministry of Health and Medical Education, including the capacities, capabilities, and resources in the institution. The identified disciplines were accomplished by the executive board of the university. They include the areas of gerontology, traditional medicine, radiation therapy, psychology and psychiatry, oral and maxillofacial radiology, pathobiology, reproductive health, as well as neonatology and perinatology.

Participants and Sampling Method: The target population for this study consisted of educational staff members at the Babol University of Medical Sciences and school officials, together with specialists in the area of medical education. The individuals who took part in the investigation were selected through applying maximum variation sampling in a purposeful manner in order to ensure the broadest possible variety of opinions

concerning staff empowerment and scientific authority. The aforementioned maximum variability was provided through capturing the field of study; rank at the university, sex, and teaching experience of the participants. The study inclusion criteria were as follows: (1) Membership within Babol University of Medical Sciences as an academic employee in one of the fields/areas related to competitive advantages and (2) Awareness of the meaning of scientific authority. The people that decided not to participate were excluded from research. Seventeen interviews were sufficient to identify the information needed. Saturation was appraised throughout the data collection and analysis work. Each of the interviews supplied new ideas which were analyzed by the research group. Once the 17th interview was performed, it was confirmed by the group that there had not been any new codes or themes, which made it clear that listening to other interviewees would not provide any new content. Seventeen respondents who represented basic (n = 10) and clinical (n = 7) sciences were interviewed. Among them, there were assistant
(n = 6), associate (n = 4), and full professors (n = 7). The respondents included nine males and eight females who had been instructing from 3 to 34 years.

Data Collection: The method of data collection was through semi-structured interviews undertaken by a member of the research team (the corresponding author) who had sufficient prior experience in qualitative research. The research team member had the necessary training in qualitative interviewing and conducted all interviews, thus ensuring uniformity in data collection. Even though the interviewer and some interviewees were associated with the same institution, thus opening the path for certain social desirability bias, the research team took precautions in this regard. The interviewees were assured that their answers to the questions were confidential, and that the interviewees did not need to fear giving wrong or right answers. The interviewer elaborated on the necessity for honest answers and looked for opportunities for non-directive probing along the conversations. The interview questions were formulated after synthesizing the literature review along with the input obtained from experts and were pilot tested on three individuals. Indeed, the interview questions were designed based on a review of scientific literature and consultation with experts, then piloted with three faculty members who were not included in the final sample to ascertain the clarity, relevance, and comprehensibility of the questions. Based on pilot interviews, only minor modifications were made in some of the wording and order of questions, while in general, the structure and content of the interview guide remained unchanged. The questions explored the understanding of academic staff about the nature of scientific authority in the fields of competitive advantage, identify which fields in Babol University of Medical Sciences would be relevant for this purpose, and what needs to be carried out by the institution. Full details of the interview guide along with the main and follow-up questions are available in Supplementary 1. They also look at how faculty empowerment affects scientific authority, the system required to facilitate empowerment, the particular initiatives that support this process, as well as needs of the faculty. Eventually, the questions assessed barriers that would arise during empowerment, and provided different ways for faculty development.

Once the questions were revised and finalized, the interviews started. This process was coordinated beforehand and took place in the period from March to December 2024. The data were collected via face -to-face interviews about faculty empowerment in the fields where winning scientific authority is critical. The interviews were conducted in a very quiet and comfortable room as requested by the participants, in order to make them feel at ease. Along the initial part of every interview, the objectives were explained to the interviewee, the framework of the interview was elaborated, and the estimation of time for the interview was provided. Each participant was assured that he or she could withdraw from the interview at any moment without explaining the reasons. Usage of friendly and informal atmosphere helped participants to express their opinions freely.

Demographic details such as age, sex, educational qualifications, academic level, teaching experience, and place of employment were collected first along the interviews. Next, the interviews continued as per already prepared questions. Indeed, the following questions were framed based on the given answers and interview guideline. Whenever required some probing questions like “What do you mean by that?” and “Could you explain please?” were applied. Ultimately, each participant was allowed to make further remarks after the interview. It should be highlighted that questions were added into the interview guideline after each interview on the basis of responses received earlier. The interviewer kept their attention on the interviewee throughout the interview, with questions asked in a

systematic fashion throughout the interview. In order to fulfill the aim of obtaining accurate responses, the same language structure and vocabulary were employed throughout the interviews with each participant. Each interviewee was also allowed to ask any questions they had along the interview. The recorded interviews, conducted with the consent of each participant, were recorded with notes also taken. The interviewees were asked at the end of each interview if they had anything to add to the discussion and whether there will be follow-up interviews. All interviews were performed within the range of 45 to 90 minutes. All interviews were transcribed word for word taking into account nonverbal cues and gestures in a Word file. The processes of interviews along with coding and theme development were periodically revisited by the second and third authors with the expertise in qualitative research.

Data Analysis Method: Data analysis was performed concurrently with collection based on Braun and Clarke's six-phase model for content thematic analysis. Initially, the researchers familiarize themselves with the content through reading and re-reading the interview transcripts. Secondly, meaningful segments were coded according to the research questions resulting in the preliminary codes generation. The next phase was about finding themes as patterns as well as recognizing the associated sub-themes based on the coded data. The fourth step involved verification of these themes and sub-themes indicating that they correspond to the participants' thoughts while being both natural and different from each other. In turn, the fifth phase focused on detailing the themes in terms of their core meaning and relations of sub-themes with the main themes. Eventually, the sixth phase involved creation of a detailed thematic model demonstrating the relationships between the identified themes (10, 11). The coding structure and theme development were reviewed by the research team, and any disagreements were resolved through discussion until consensus was reached.

Data management and analysis using MAXQDA 2020 was conducted on the interview transcripts. Initial statements were formed from the inputs of the participants and continuously compared. Statements that were similar created candidate themes. These themes were revised and refined through repeated discussions with the research team members, according to the Braun and Clarke's methodology. The members of the research team reviewed the structure of the coding as well as theme creation and resolved disagreements by discussion until reaching an agreement.

The trustworthiness of the findings was ensured by adhering to the criteria proposed by Guba and Lincoln. Credibility was enhanced through prolonged engagement with the data, repeated reading of the interview transcripts, as well as continuous comparison of the findings with the original data throughout the analytical process. Transferability was supported by purposive maximum variation sampling and providing detailed descriptions of the participants, study context, and data collection procedures. Dependability was strengthened by applying a systematic analytical process based on Braun and Clarke's six-phase framework and through periodically reviewing the coding framework and theme development among the research team. Confirmability was ensured through verbatim transcription of the interviews, transparent documentation of the analytical process, and resolving discrepancies in coding and interpretation through discussion until consensus was reached (12, 13).

To ensure comprehensive and transparent reporting of this qualitative investigation, the study procedures, data collection, and analytical steps were structured and evaluated in strict accordance with the COREQ (Consolidated Criteria for Reporting Qualitative Research) 32-item checklist. Adherence to the COREQ guidelines guarantees that all critical aspects of the research team's reflexivity, study design, data analysis, and findings derivation are reported with maximum methodological transparency.

Ethical Considerations: Approval for the study was granted by the Ethics Committee of Shahid Beheshti University of Medical Sciences, with the approval code of IR.SBMU.SME.REC.1402.080. All participants were provided with written informed consent. They were reassured that their provided information would only be employed for research purposes and that the information published would remain anonymous.

Results

A total of seventeen faculty members and academic administration joined this study. The demographic information of participants is reported in Table 1. The mean age is 51.71 ± 10.04 years. The average teaching experience is 18.29 ± 9.88 years. Females represented 47.06% of the participants and other participants were male. Also, 58.82% belonged to the basic sciences faculty while others belonged to clinical faculties. Considering academic positions, 35.29% of participants were assistant professors, 23.53% were associate professors,

and 41.18% were professors. The initial coding phase exhibited the extraction of 215 initial codes. These initial codes were reviewed, from which 12 subthemes were derived based on underlying themes. Ultimately, 5 themes emerged from these 12 subthemes. MAXQDA 2020 version was utilized for data analysis.

Table 1. Demographic Characteristics of the Study Participants (N=17)

No.	Age (Years)	Teaching Experience (Years)	Gender (Female/Male)	Academic Rank (Assistant Professor/Associate Professor/Professor)	Faculty Type (Basic Sciences/Clinical)
Participant 1	40	9	Female	Assistant Professor	Basic Sciences
Participant 2	75	30	Male	Professor	Clinical
Participant 3	57	30	Female	Associate Professor	Basic Sciences
Participant 4	35	3	Female	Assistant Professor	Basic Sciences
Participant 5	42	7	Male	Assistant Professor	Clinical
Participant 6	57	18	Male	Associate Professor	Clinical
Participant 7	45	13	Female	Assistant Professor	Basic Sciences
Participant 8	57	25	Male	Professor	Clinical
Participant 9	46	12	Male	Professor	Clinical
Participant 10	58	29	Female	Associate Professor	Basic Sciences
Participant 11	57	20	Male	Professor	Clinical
Participant 12	51	25	Male	Professor	Basic Sciences
Participant 13	38	9	Male	Associate Professor	Basic Sciences
Participant 14	55	27	Female	Professor	Basic Sciences
Participant 15	63	34	Female	Professor	Basic Sciences
Participant 16	50	13	Male	Assistant Professor	Clinical
Participant 17	53	7	Female	Assistant Professor	Basic Sciences

Note. *Values represent individual participant data, or summary statistics where applicable. Mean age = 51.71±10.04 years; Mean teaching experience = 18.29±9.88 years. Abbreviations: F = Female, M = Male.*

1. Enhancing the Professional Competencies of Faculty Members

Based on the participants' statements, empowering faculty toward scientific authority requires development at both the individual competency level and the institutional impact level. This theme encompasses faculty members' capability enhancement in research and education, together with their ability to translate knowledge into societal and technological contributions.

1.1 Enhancing Research Skills: According to the participants, to achieve scientific authority, faculty members need to align their research with international standards and publish their findings in reputable journals. Further, teaching advanced research methods and organizing empowerment workshops are critical in boosting research skills. Also, the development of interdisciplinary research encourages broader collaborations and augments scientific as well as social impact. Continuous evaluation and constructive feedback, together with improving presentation skills at international conferences, contribute to establishing the scientific standing and authority of faculty members.

In this regard, Participant 3 stated: "Empowering faculty members in writing articles with higher citations can help us move towards scientific authority". Participant 5 also mentioned: "Collaboration with other specialists, both domestically and internationally, especially in research, can significantly boost our ability to achieve scientific authority".

1.2 Improving the Quality of Education and Teaching: According to the participants, familiarity of faculty members with modern teaching methods, the use of technologies such as augmented reality and artificial intelligence, English language training, as well as designing logbooks and educational programs for students are essential for empowering faculty members to achieve scientific authority. Further, organizing workshops to boost teaching skills and establishing specialized courses in educational program design can help enhance teaching quality and empower faculty members to attain scientific authority.

Participant 6 stated: "Teaching English can be very useful for faculty members; it helps keep them up-to-date, which itself contributes to scientific authority". Participant 15 noted: "in my opinion faculty members should be able to work with new methods and tools, including apps".

1.3 Expanding Knowledge and Technology Production: Based on participant views, empowering faculty members to achieve scientific authority requires

the ability to translate scientific knowledge into practical applications that address community needs, enhance quality of life, and contribute to solving societal challenges. The participants emphasized that such translation may include applied research, technological innovation, and, where appropriate, collaboration with industry. They also highlighted that the mechanisms underscored in third-generation universities, such as innovation-oriented approaches and stronger university–society connections, can support the broader mission of scientific authority when aligned with academic priorities and societal needs.

Participant 5 mentioned: "I think we need to empower faculty members to generate the knowledge and science needed by society". Participant 12 also said: "Faculty members should be encouraged to direct their research findings toward innovation and commercialization so that the knowledge generated in universities can be practically applied in industry and society".

2. Strengthening Supportive and Facilitative Infrastructure

The participants emphasized that achieving scientific authority depends on securing financial resources, developing research infrastructure, and streamlining administrative processes to effectively support faculty as well as research activities.

2.1 Financial Support and Resource Allocation: According to the faculty members, allocating appropriate research budgets for effective research, especially in areas that can have a tangible impact on society, is an essential requirement in this path. Further, providing financial resources to expand promising scientific fields and enhance research capacities in these areas will boost the scientific standing of universities.

Participant 1 suggested: "Another point to consider is the issue of sufficient financial support. In light of recent economic events, any plans can encounter financial troubles. Even our academic colleagues and students need financial incentives". Participant 11 claimed: "Without an adequate level of financial support, even the best ideas and valuable discoveries will not see the light of day. The significance of having enough funds for scientific advancement cannot be underestimated".

2.2 Development of Physical and Digital Infrastructure: Based on the participants' statements, equipping laboratories and research centers with advanced technologies, creating databases to facilitate access of faculty members to research resources, developing online systems for quick and efficient access to scientific information, as well as upgrading hardware and software infrastructure to support faculty research activities are among the key measures for empowering faculty members to achieve scientific authority.

Participant 12 noted: "To achieve scientific authority, one must possess the prime infrastructure including hardware and software dedicated to faculty and students." Participant 2 added: "Provision of reliable hardware and software facilities is one of the means to establishing scientific authority".

2.3 Reducing Administrative and Bureaucratic Barriers: In this regard, the participants believed that eliminating unnecessary administrative steps to facilitate and accelerate the implementation of research plans, streamlining the process of obtaining permits, securing financial and equipment resources, and enhancing the efficiency of administrative systems through shortening waiting times and enhancing transparency are key strategies.

Participant 1 mentioned: "It is important that we pay attention to reducing bureaucracy and simplifying administration. Administrative processes need to be simpler and quicker, as our faculty spends too much time on administrative work". Participant 6 commented: "The reduction of bureaucracy and simplification of administrative processes would benefit researchers – they could quickly implement their ideas and deliver results of their research to the society".

3. Individual and Organizational Excellence of Faculty Members

The participants highlighted that faculty empowerment requires both structural motivational mechanisms, such as promotion policies and scientific rewards, as well as supportive conditions that enhance individual motivation and engagement.

3.1 Providing Promotion Benefits and Scientific Rewards: According to the faculty members, modifying the promotion system to be based on scientific performance and the quality of research activities, creating financial and moral incentives for researchers, as well as designing reward systems aligned with scientific achievements of faculty members are key strategies that can promote motivation and scientific productivity in universities thus contributing to achieving scientific authority.

Participant 4 stated: "The development of factors that incentivize promotion and academic growth will go a long way to promote teachers' participation in

workshops on empowerment and help them attain scientific authority." Participant 14 argued that "there are no tangible achievements on the part of faculty. The absence of support has turned scientific authority into a mere formality, with the faculty being unmotivated and failing to show up for meetings".

3.2 Enhancing Individual and Organizational Motivation: Faculty members believed that efforts to mitigate non-educational and administrative burdens that prevent them from focusing on research and teaching activities could help ameliorate their performance. Further, providing study opportunities at reputable centers, granting scholarships or facilities to faculty members for research both domestically and internationally, would boost their knowledge and experience, thereby supporting their journey towards scientific authority.

Participant 1 remarked: "The demands of the workload are so high that, for instance, I have no chance to participate in workshops, advanced training sessions, or international conferences, which I would love to do. It would be good if we had some time off to study and stay updated".

Participant 15 added: "Having less involvement in administrative work and peripheral duties would allow the teachers to spend more time on their studies and research, thus enhancing their motivation and improving the quality of education as well as research. Meanwhile, teachers who feel secure in their social and welfare conditions could focus on scientific activities without worrying".

4. Expanding Scientific Interactions and Talented Human Resources

This theme highlights the significance of international collaboration and talent acquisition in enhancing universities' scientific stature. The participants noted that global partnerships, engagement with leading institutions, and joint research efforts facilitate knowledge exchange, augment research quality, and support the attainment of scientific authority.

4.1 Developing International Scientific Collaborations: This subtheme highlights the importance of enhancing scientific and research interactions with reputable global centers. Establishing connections with international professors and researchers, participating in joint research projects, and developing global scientific networks ameliorate research quality, knowledge-sharing, and the university's scientific standing. These collaborations also facilitate access to scientific resources, modern technologies, and educational opportunities, boosting the university's competitiveness on a global scale.

Participant 3 stated: "The infrastructure for empowering faculty members exists, but we need to expand communications. In order to achieve scientific authority, it is essential to send faculty members to esteemed institutions to remain current in their respective fields." Participant 2 said: "As the university strengthens its ties with international scientific institutions and professors participate in global projects, the quality of research will improve, and the university will attain a higher scientific status internationally".

4.2 Attracting Talented and Elite Faculty Members: According to the participants, streamlining recruitment processes, providing supportive facilities, and developing international recruitment systems can ameliorate education and research quality, facilitate knowledge exchange, and expand global scientific interactions. These actions boost the university's competitiveness and bring it closer to scientific authority.

Participant 11 noted: "There are many factors involved in becoming a scientific authority, one of them being the availability of human resources. If we want to make progress, we should hire individuals who are both talented and creative." Participant 7 added: "The main way to develop scientific authority is through obtaining talented faculty members and having easy access to people full of new ideas and experience".

5. Strategic Policymaking towards Scientific Authority

This theme underscores the critical role of effective management and strategic policies in academically empowering faculty through comprehensive development plans, macro-level policies, and performance evaluation systems.

5.1 Formulating Macro Strategies for Faculty Empowerment: This subtheme emphasizes the need for structured and long-term strategies aimed at empowering faculty members. Creating clear, purposeful academic development pathways—particularly in teaching and research—as well as implementing overarching policies to boost educational and research quality were noted as critical actions. These strategies contribute to enhanced scientific productivity among faculty and promote the university's academic standing both nationally and internationally.

Participant 5 stated: "In order for faculty members to truly become empowered, they should be provided with

a clear and purposeful path. Actions should not be temporary or disorganized. We need a comprehensive strategy that strengthens their teaching and guides their research. This way, the university can also achieve a stronger scientific position. Participant 3 also remarked: “If we really want to empower faculty members, we need a well-documented, long-term plan. Everyone should not be going their own way. We need to pinpoint what skills need to be improved and identify how to proceed along that path. This will ameliorate both education and research quality and raise the university’s reputation".

5.2 Establishing a Scientific Performance Evaluation System: This subtheme focuses on designing and implementing transparent, consistent systems for ascertaining academic performance of faculty members. The participants emphasized that an effective evaluation system should identify strengths and weaknesses, provide opportunities for improvement, and rely on clear, fair criteria. Such systems motivate academic growth and continuous feedback while supporting long-term scientific development. Participant 16 noted: “When a capable administrator takes office, they develop many plans for scientific authority and faculty empowerment. However, their successor may not adhere to these initiatives. We need a supervisory system that monitors academic activities, particularly those of faculty, and ensures commitment to strategic plans”.

Participant 17 stated: “It is important to have a clear and impartial evaluation procedure that appraises more than just the number of publications. It must take into account the quality of teaching, influence of research, and contribution of the academics. With up-to-date and accurate assessment, faculty members stay informed about their scores”.

Discussion

This research's underlying motivation was to elucidate expert opinions on the faculty empowerment path at Babol University of Medical Sciences, based primarily on competitive disciplines for accomplishing scientific authority. The findings of this study demonstrated that the perspective of faculty on the empowerment path toward achieving scientific authority encompassed five major themes.

Enhancing the professional competencies of faculty members included initiatives aimed at boosting research capabilities, ameliorating the standards of teaching and education, as well as expanding the generation of knowledge and technology, which, according to the faculty members, contribute to attaining scientific authority. These results are comparable with other studies. For instance, aiming to determine the factor structure and appraise the internal consistency of the scientific authority questionnaire among faculty members, the study by Dabirian et al. (2020), included items such as "achieving advanced science and knowledge”, "enhancing scientific journals”, " intensifying emphasis on research projects and their transformation into science and technology”, and "expanding research in applied and developmental fields”. More than half of the participants assigned high importance ratings to these items in establishing scientific authority (8). Likewise, the study by Tavakoli et al. (2017) noted that faculty members considered research and management of scientific resources as key aspects of faculty empowerment needs assessment (14). The research undertaken by Ahmadi and Sayyah (2017) identified factors such as providing various educational and research facilities, as well as strengthening information databases and digital libraries as foundational components and advantages of the faculty empowerment committee (4). These findings suggest that, from the participants’ perspectives, achieving scientific authority may extend beyond enhancing research output and may also involve strengthening faculty members’ educational competencies as well as their capacity to translate knowledge into innovation and technology. This highlights the multidimensional nature of faculty empowerment, in which excellence in teaching and research should be developed concurrently. Thus, enhancing educational and research activities and competencies, together with the production of knowledge and technology, are recognized as factors that empower faculty members toward achieving scientific authority.

Strengthening facilitating and supportive infrastructures to empower faculty members in attaining scientific authority encompassed financial support and resource allocation, developing physical and digital facilities, as well as reducing administrative and bureaucratic obstacles. These findings align with other studies. Jahangiri et al. (2021) conducted a study to explain a contextual model of strategies and outcomes of competitive advantage based on faculty empowerment. The results indicated that the existence of appropriate hardware and software resources in information technology, along with organizational agility, and optimization of human resource systems, were among key strategies for attaining competitive

advantage through empowerment (15). Rahimi et al. (2013) also noted that providing resources and facilities at the workplace was considered a faculty empowerment factor from the perspective of faculty members (16). These findings suggest that faculty empowerment cannot be achieved solely through individual efforts. Organizational investment in financial, technological, and administrative support creates an enabling environment which allows faculty members to fully utilize their academic capabilities. Thus, financial and infrastructural support is regarded as one of the significant factors in achieving scientific authority by faculty members.

Based on the results of this study, individual and organizational excellence of faculty members, such as offering promotion opportunities, scientific rewards, and boosting individual and organizational motivations, are among the factors that empower faculty members toward achieving scientific authority. Similar to these findings, the study by Ahmadi and Sayyah also stated that motivating through rewards, establishing an active welfare committee for boosting faculty welfare, and utilizing performance-based reward planning are foundational factors and contributors to the heightened participation of the empowerment committee (4). This finding emphasizes that motivation is closely linked to opportunities for professional growth and recognition. When faculty members perceive transparent promotion pathways and fair reward systems, they are more likely to engage in research, innovation, and institutional development.

Expanding scientific interactions and attracting talented human resources involved fostering international scientific collaborations as well as recruiting talented and elite faculty members, together constituting another dimension of faculty members' perspectives on empowerment toward scientific authority. This theme is in line with other research findings. Jahangiri et al. (2021) reported that establishing the required infrastructures for appointing capable faculty to essential positions, creating favorable conditions for retaining capable faculty, ensuring student satisfaction through capable faculty in both educational and research activities, promoting meritocracy in faculty recruitment, and ameliorating competitive atmospheres among universities are among the competitive advantage strategies based on empowerment (15). Likewise, in the study by Dabirian et al. (2020), "expanding university relations with leading international academic circles", "material encouragement of scientific activities and distinguished individuals", and "encouragement of teamwork and interdisciplinary collaboration" were identified as key items in the questionnaire, with a significant percentage of participants considering them essential for achieving scientific authority (8). These findings reinforce the significance of internationalization as a strategic component of scientific authority. International collaborations facilitate knowledge exchange, increase research visibility, and create opportunities for interdisciplinary innovation, all strengthening institutional competitiveness.

Strategic policymaking toward scientific authority, including formulation of macro strategies for faculty empowerment and establishment of a scientific performance evaluation system, was the final theme identified in this study. In this respect, Jahangiri et al. (2021) found that implementing periodic evaluations and skills testing, modifying organizational strategies for resource provision, applying empowerment-based methods in recruitment and performance evaluation, reengineering processes, as well as emphasizing teamwork and participatory atmospheres are among the competitive advantage strategies based on faculty empowerment (15). Rahimi et al. (2013) also reported that the existence of a performance evaluation system within relevant academic departments was considered as a contributing factor to faculty empowerment from their perspective (16). The findings also suggest that sustainable scientific authority requires systematic governance rather than isolated initiatives. Strategic planning, continuous appraisal, and evidence-informed policymaking provide the organizational direction required for long-term faculty development.

The research had its limitations that need to be taken into consideration while discussing the outcomes. Firstly, the study was implemented within a single institution: Babol University of Medical Sciences and as a result, the conclusion is not fully applicable to other medical educational institutions with various organizational structures, resources, and managements. Further, the number of participants was limited, which may restrict the transferability of the findings to other settings; thus, it is unsuitable for studying other types of university education. Also, there may have been a social desirability bias related to the relationship between the researcher and some participants of the research, despite trying to maintain confidentiality and avoid bias. In

addition, everyone knows that interviews are commonly used techniques; however, in this specific research, there was no triangulation and other means of gaining data. Finally, the research was limited to only eight competitive advantages that are employed within Babol University of Medical Sciences and thus is definitely not applicable to other educational institutions.

Conclusion

This study explored experts' perspectives on faculty empowerment pathways for achieving scientific authority at Babol University of Medical Sciences, with a focus on disciplines with competitive advantages. The findings indicated that achieving scientific authority requires a multidimensional faculty empowerment approach which integrates individual development, organizational support, scientific collaboration, and strategic governance. The identified elements, as viewed through the lens of faculty members, university leadership, and medical education professionals, can serve as an evidence-based background on which to develop faculty empowerment strategies which are properly aligned with institutional priorities. It is suggested that more research be undertaken across diverse institutions and fields of study, in order to examine the validity of the obtained results.

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