



## Exploring Components, Barriers, and Solutions for Faculty Members' Research Empowerment Programs Based on the CIPP Model: A Qualitative Study

Mostafa Jafari<sup>1</sup>, Soosan Laei<sup>2\*</sup>, Elham Kaviani<sup>2</sup>, Rostam Jalali<sup>3</sup>

1. PhD Student in Educational Management, Dept. of Educational Sciences, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.

2. Assistant Prof., Dept. of Educational Sciences, Kermanshah Branch, Islamic Azad University, Kermanshah, Iran.

3. Associate Prof., Dept. of Nursing, Kermanshah University of Medical Sciences, Kermanshah, Iran.



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#### \* Corresponding author:

Soosan Laei,


#### E-mail:

susanlaei100@gmail.com

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### Abstract

**Background:** Accurate knowledge of barriers and solutions for faculty members' research empowerment programs will lead to the promotion and development of universities. This study aimed to explore components, barriers, and solutions for faculty members' research empowerment programs in Kermanshah University of Medical Sciences based on the context, input, process, and product (CIPP) model.

**Materials and Methods:** In this qualitative study, 15 faculty members, who had participated in research empowerment programs as participants and lecturers, were recruited using the purposive sampling method in 2020 based on semi-structured interviews. Analysis was performed using the content analysis method with MAXQDA software V.20.

**Results:** The results of the interviews were extracted in eight main categories, including four barriers and four solutions. The barriers included learners' problems, resource constraints, planning weaknesses, and performance weaknesses. The solutions included structural improvement, human resource improvement, workshop improvement, and performance improvement.

**Conclusions:** The results showed that there are barriers and solutions for improving research empowerment programs, which could be used for further improvement. It is recommended that this study be conducted in other universities to accurately identify barriers to executing research empowerment programs.

**Keywords:** Empowerment, Solutions, Qualitative Research

### Introduction

Empowerment is the most important factor leading to the success and progress of any organizations [1]. Besides, human resource empowerment is a new approach to creating opportunities for the flourishing of individuals' talents, abilities, and competencies [2]. In addition, human resource empowerment is one of the major components organizations can employ to enter national and international arenas. Faculty members play a crucial role in producing science in any society and in formulating policies and strategies, as well as

conducting fieldworks [3]. Universities should possess capable faculty members to train and empower human resources in the fields of education and research [4]. Faculty members are basic assets of a university, so promotion of their educational capability depends on the capability of the educational system and the training of skilled manpower. Therefore, running training courses aimed at empowering professors seems necessary [5]. Faculty empowerment programs based on a research-based learning approach can lead to the achievement of educational research goals through creating an opportunity for applying

learnings and transferring knowledge to the real environment [6]. Empowerment workshops held for faculty members have been able to improve teaching and evaluation skills, thereby leading to employee satisfaction [7]. Therefore, it is clear that upon changing some components, faculty members' ability will increase, thereby making them derive more satisfaction from the courses. To examine variables of an educational course, there is a need for a model to examine the course [8]. Among these models, one can refer to the CIPP model that includes four main components of context, input, process and output, which are presented and designed to facilitate decision-making among managers. The reason for choosing this model in the present study is its being comprehensive and useful for systematically examining educational and research programs [9]. Lee et al (2019) used the CIPP model to make decisions on improving learning programs [10]. Identification of research challenges and empowerment of faculty members lead to the spotting of fundamental weaknesses for planning to overcome them to pave the way for changes in empowerment programs [11]. Overcoming challenges, such as poor participation, lack of training, and lack of evaluation strategies are important barriers to the development of empowerment programs [12]. Universities of medical sciences in Iran have seriously conducted research and run empowerment programs for faculty members in the last few years; however, no fundamental analysis has been made to improve these programs, identify barriers, and come up with effective solutions for the programs. Therefore, the present study was conducted to explore components of, barriers to, and solutions for research empowerment programs for faculty members of Kermanshah University of Medical Sciences (KUMS) based on the CIPP Model.

### Materials and Methods

This qualitative study was conducted using a content analysis method, with its statistical population having been composed of 15 faculty members of the KUMS. These faculty members were chosen from faculties of Health, Nutrition, Pharmacy, Dentistry, Nursing and Midwifery, Medicine and Paramedical, as well as centers of Health Technology Research and Medical Biological Research in 2020. Using content analysis, individual interviews with faculty members continued until data saturation, yet no new codes were produced. Ethical considerations of this study were approved by the Islamic Azad

University, Kermanshah branch. Moreover, consent forms were obtained from the participants. In this study, the only inclusion criterion for selecting the interviewees was the experience of participating in empowerment workshops or teaching in empowerment workshops for 10 sessions. In contrast, the exclusion criterion during recording the interviews was the interviewees' unwillingness to continue the meeting to withdraw from the interview at any time. The interviewees were selected purposefully in terms of age, gender, education, job title, work experience, and job location so that the results obtained from the sample would represent the study population. The sample size of the interviewees was determined based on the saturation limit of the data extracted from the interviews. To meet the objectives of the research and answer the questions of the semi-structured interview, the participants were determined based on the specified characteristics. Besides, the duration of the interviews was determined according to their participation, which lasted an average of 30 to 60 minutes.

At the beginning of the interviews, the interviewers were asked to provide their demographic information, and then the interview questions were asked. They were provided with a question guide, which consisted of 4 main questions, such as, "what are the barriers to and solutions for input components of a research empowerment program?" The results were recorded with prior notice and upon an agreement between the interviewee and the interviewer. By summarizing meaning units in relation to each other, research codes were prepared. Besides, by examining differences and similarities between the extracted codes, they were divided into different subcategories and main categories. In addition, the interviews were conducted in a comfortable environment in terms of the ambient temperature (18-21 °C) and noise (less than 65 dB).

For post-performance data management, the content of the interviews was analyzed using MAXQDA software V.20. Firstly, the codes extracted from the text were shared with the interviewees by a research member who checked to ensure that the codes extracted from the text of the interviews were what the interviewees needed. In case of any disagreement, necessary corrections would be made. Next, to determine reliability of the coded data by the researcher, extracted codes were given to an expert in the qualitative research to examine the same understanding, and the data were re-examined.

Written informed consent was obtained from all participants in this study that was conducted in the Islamic Azad University, Kermanshah Branch.

Besides, an identity letter was obtained from the deputy of research and technology for collecting data. In addition, this study was approved by the Ethics Committee of the Islamic Azad University, Kermanshah Branch (Code 19221212981016).

**Results**

In this study, 15 faculty members of the KUMS who had participated in research empowerment programs were interviewed (Table 1).

**Table 1.** Frequency and relative distribution of demographic variables of the participants

Variables	Number	%	
Gender	Male	6	40
	Female	9	60
Scientific rank	Instructor	1	6.7
	Assistant professor	5	33.3
	Associate professor	7	46.7
	Professor	2	13.3
Scientific group	Clinical sciences	13	86.7
	Basic sciences	2	13.3
Responsibility of interviewees	Faculty member	5	33.3
	Faculty member and research manager	10	66.7
Status of interviewees	Participant in workshops	6	40
	Instructor and participant in workshops	9	60
Faculty of center	Health	3	20
	Nutrition	1	6.7
	Pharmacy	1	6.7
	Dentistry	1	6.7
	Nursing and midwifery	2	13.1
	Medicine	1	6.7
	Paramedics	3	20
	Health Technology Research Center	1	6.7
	Medical Biological Research Center	1	6.7

After data analysis, the results of the interviews were extracted in 4 main categories of barriers. These barriers were learners' problems, resource constraints, planning weaknesses, and

performance weaknesses, which were effective in the research on empowerment programs based on the CIPP model (Table 2).

**Table 2.** Primary extracted codes, subcategories, and main categories

Primary extracted codes	Subcategories	Main categories	Components
Weaknesses in need assessment	Need assessment and informing weaknesses	Learners' problems	Context
Weaknesses in the informing method			
Earned research points	Motivational weaknesses	Learners' problems	Context
Lack of motivation			
Structural motivation	Learners' weaknesses	Learners' problems	Context
Irresponsibility			
Absence in workshops	Learners' weaknesses	Learners' problems	Context
Weaknesses in interactions			
Content weaknesses	Content weaknesses	Learners' problems	Context
Poor educational tools			
Structural content	Content weaknesses	Learners' problems	Context
Support restrictions			
Restrictions on execution	External constraints	Learners' problems	Context
Resource constraints			
Potential reductions	External constraints	Resource constraints	Input
Lack of expertise			
Lack of mastery	Internal constraints	Resource constraints	Input
Incompatibility			
Heterogeneity of participants	Internal constraints	Resource constraints	Input
Individual differences			
Lack of interactions	Internal constraints	Resource constraints	Input

Weak supervision	Monitoring weaknesses	Planning weaknesses	Process
Inability to teach			
Holding repetitive workshops	Structural weaknesses	Performance weaknesses	Product
Inappropriate content			
Lack of familiarity with teamwork	Group weaknesses	Performance weaknesses	Product
Lack of teamwork			
Lack of consensus			
Differences in performance	Management weaknesses	Performance weaknesses	Product
Ignoring creativity			
Lack of completion of assessment tools	Evaluation weaknesses	Performance weaknesses	Product
Lack of evaluation			
Lack of feedback			

The results of the interviews were classified in 4 main categories of solutions. These solutions included structural improvement, human resource improvement, workshop improvement, and

performance improvement, which were effective in research empowerment programs based on the CIPP model (Table 3).

**Table 3.** Primary extracted codes, subcategories, and main categories

Component	Main categories	Subcategories	Primary extracted codes
Context	Structure improvement	Group performance	Doing teamwork
			Group participation
		Structural modification	Scoring
			Will to reform
			Fundamental study
			Appearance deformation
			Information update
			Research culture
			Priority of quantity over quality
			Intelligence
Input	Human resource improvement	Scheduling	Providing suitable conditions
			Electronic checklists
		Teaching skills	Increasing budget
			Voluntary participation
		Increasing motivation	Best time
			Timing in programs
			Teacher empowerment
			Supporting teachers
			Using guidelines
			Teaching skills
Process	Workshop improvement	Splitting	Teaching experience
			Internal incentives
		Specialization	Understanding interests
			Individual creativity
Product	Performance improvement	Quality improvement	Special workshops
			Separation of learners
		Quality improvement	Sub-special workshops
			Expert meetings
			Research expert
			Skilled expert
Quality improvement	Applied research		
	Taking advantage of opportunities		
	Process upgrade		
Quality improvement	Quality upgrade		
	Feedback		

## Discussion

This study aimed to explore components of, barriers to, and solutions for the research empowerment program of the faculty members of the KUMS based on the CIPP Model. Interview results were categorized based on appropriateness of the main categories of empowerment barriers. These barriers included learners' problems, resource constraints, planning weaknesses, and performance weaknesses based on the CIPP Model. Katarzyna (2020) emphasized that lack of participation by members in the decision-making process about education was one of the obstacles [13]. Similarly, Ahmadi and Sayyah Berger (2017) considered educational components, insufficient coordination, and inefficiency of the information system as the major obstacles [14]. Hidaka et al (2015) identified limited resources as major obstacles to program development [15]. Mahboubi (2015) enumerated several barriers in terms of personal, motivational, educational, and behavioral aspects to program development [16]. Hamdipour et al (2019) reported psychological, individual, process, communicational, organizational, innovational, and technological barriers as the most important challenges to knowledge empowerment [11]. Results of another study indicated that managerial, organizational, financial, and professional barriers had the greatest impact on the process of doing research activities [17]. Fotouhi (2020) concentrated on removing obstacles to providing evaluation and empowerment feedback to university faculty members [7]. Asadollahi (2019) alluded to the effective factors in empowerment programs, including lack of motivation, inadequate welfare of faculty members, weak educational and research systems, lack of supervision, poor communication, and lack of participation by faculty members [18]. As can be seen, the results of past research are consistent with the present one. Accordingly, it would be difficult to achieve goals without identifying resource constraints as well as planning and performance weaknesses.

The interview results were categorized based on the appropriateness of the main categories of empowerment solutions. Accordingly, these solutions included structural improvement, human resource reforms, workshop improvement, and performance improvement based on the CIPP Model. Ahmadi and Sayyah Berger (2017) identified that the main factors of performance improvement strategies was components of content improvement, executive improvement and evaluation concepts [14].

According to Khodabakhshzadeh et al (2015), planning to change and create a positive attitude in the category of human resource productivity and its promotion is among the most effective strategies for improving productivity [19]. Mohammadi (2016) believe that performance appraisal, feedback, and development have the greatest impact on the variable of employee empowerment [20]. Waruni and Rod (2020) believe that revision following corrective feedback can improve activities [21]. As can be seen, the results of past research are consistent with the present one. According to the results, components of implementation method improvement, structural improvement, human resource improvement, workshop improvement, and performance improvement are required for any programs. Thus, paying attention to them not only increases the quality of the programs, but it also provides a basis for increasing the quality of education and research among faculty members. Accordingly, identifying barriers to and effective strategies on research empowerment among faculty members using the CIPP model improves the quality of research, thereby promoting research performance in universities and the country.

Environmental characteristics as well as motivational, personality, and extra-organizational factors affecting research empowerment were not considered in the present study. This study coincided with the outbreak of the COVID-19 pandemic. Conservatism on the part of the participants could be a limiting factor as well. Given the limitations, it is necessary to pay attention to the main factors of the solutions, including improvements in the structure, human resources, workshops, and performance before executing the research empowerment program. It is suggested that this study be conducted in other universities to accurately identify barriers to program execution. Selecting a larger statistical community can significantly reduce the conservative role of the participants.

## Conclusion

According to the results of this study, learners' problems, resource constraints, planning weaknesses, and performance weaknesses were considered as the main obstacles to the execution of empowerment programs. To remove the mentioned obstacles, solutions, such as effective implementation methods, structural reforms, human resource reforms, workshop reforms, and performance improvements should be considered. It is expected that policymakers in the field of

higher education give priority to improving research empowerment programs.

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**Conflict of interest:** None declared.

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