



Code 04: Second Round the Fuzzy Delphi Panel

Second Round of Expert Participation on the Social Impact of Medical Research Utilization in the Fuzzy Delphi Panel

Dear Dr. [Last Name],

Thank you very much for your time in completing the first round of the fuzzy Delphi questionnaire. This questionnaire focused on the stages, steps, and components needed to design a framework for “*the Social Impact of Medical Research Utilization*.” We aim to validate and confirm the components of the proposed conceptual framework in the first round of the Delphi method. Based on the collective opinions of experts, including yourself, we made changes to the initial questionnaire.

These changes significantly improved its quality and richness. At this stage, the second questionnaire is presented to you, incorporating the feedback from the experts. Given the importance and applicability of the research topic, we decided to achieve maximum consensus among the experts on the components and model of the research.

This approach aims to make the results of the current study closer to reality and to provide guidance for future research in this area. Your valuable feedback in this round will be used for the final adjustment of the social impact of applying medical research.

We kindly ask you to review and provide your feedback on the initial framework, basic themes, organize themes, and global themes, contextual themes identified. Please consider your previous responses and the average responses from other members of the Delphi panel.

It is noteworthy that the success of achieving the research objectives depends on your thoughtful responses. If you have any reflections on the identified concepts and categories, please note them at the end of the questionnaire.

In general, based on the dimensions of the knowledge spiral by Nonaka and Takeuchi¹ and the extracted components², the way of using and the social impact of medical research utilization (socialization) begins as a spiral movement (helical). This movement starts with knowledge governance activities and knowledge production and exchange (externalization). It then progresses by linking and combining dissemination and transfer activities with knowledge mobilization towards popularization and utilization activities (internalization). This process will take shape in a continuous manner.

Best regards.

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¹ SECI

² Nazeri N, Shabani A, Hossini Golkar M, Noruzi A. The Social Impact of the Application of Medical Research with Meta-Synthesis Approach. Health Information Management. 2023;20(4):205-13.



. \ Naidorf CJ. Knowledge utility: From social relevance to knowledge mobilization. 2014.

A. Demographic Information Please provide your personal and professional background information by selecting the appropriate options or filling in the blanks.	B. Professional/Executive Experience Please indicate all roles that apply to you. (Select all that are relevant.)
1. Gender: • Male • Female • Prefer not to say 2. Highest Academic Degree: • PhD / Doctorate • Other (please specify): _____ 3. Field of Study (please specify all that apply): 4. Current Occupation: • Faculty Member • Researcher • Administrator • Other (please specify): _____ 5. Academic Rank (if applicable): • Expert • Assistant Professor • Associate Professor • Professor • Distinguished Professor 6. Years of Experience: • 5-10 years • 10-15 years • 15-20 years • 20-25 years • More than 25 years	• Faculty Member • Research Director (University level) • Research Director (Ministry level) • Research Expert • Research Ethics Committee Member • Managing Director / Editor-in-Chief of a Journal • Other (please specify): _____



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Contextual Themes	Global Themes	Organize Themes	Basic Themes	Participant Score in the First Round	Average Scores of the First Round	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Knowledge Governance and Research ¹	Activity Mechanisms of Knowledge Governance and Research	Knowledge Governance and Research at the Micro Level (Research Policy by the Researcher)	Determining research priorities		4/60					
			Transferring the research question		4/28					
			Research targeting		4/36					
			Research culture		4/24					
			Research training		4/36					
			Research environment		4/32					
			Research ethics considerations		4/28					
			Research management		4/40					
			Research management and organizational factors ²		4/44					
			Recognition and Types of Social Values of Research		4/16					
			Collaborative research ³		4/24					
		Knowledge Governance and Research at the Meso level (Researcher Actions by Universities and Scientific Institutions)	Research funding systems		4/56					
			Knowledge acquisition (attracting knowledge-holders)		4/24					
			Collaborative partnership ⁴		4/20					
			Research topic adaptation (adaptation of new policies and guidelines)		4/20					
			Identification of research dimensions ⁵		4/08					
			Research Evaluation Processes ⁶		4/40					
			Research Evaluation Systems		4/20					
			Health Technology Evaluation Indicators		4/28					
			Effective Components in Social Evaluation of Research ⁷		4/40					

¹ It is the construction and application of authority over the goals and approaches of research, and it deals with the arrangement of authority relationships within the network of actors in the field of research.

² For example: the experience of the principal investigator, the size of the research group, and the required research budget.

³ Collaboration occurs between two or more parties working together to achieve common goals. In the context of market research, this method allows researchers from diverse backgrounds, such as industry and academia, to bridge the gap between theory and practice.

⁴ Agreements and actions are undertaken by agreeing organizations to share resources in order to achieve a mutual goal. Joint partnerships rely on the collaboration of at least two parties who agree to share resources, such as finances, knowledge, and personnel.

⁵ For example: Research Intermediary Products Dimension (tools, methods, research-based guidelines, and educational materials), Economic-Social and Institutional Dimension of Research, Research Empowerment Dimension (influence, personal growth, job creation or financial independence, stakeholder collaboration, and user engagement), Environmental Dimension of Research

⁶ For example: Peer review, Evaluator assessment, Research impact assessment, Assessment of the social impact of research, Organizational social impact assessment, Quality-based assessment, Evaluation and valuation of scientific output, Assessment of subject-matter expert groups, Research's contribution to process evaluation

⁷ For example: Technocratic view (Technocratic approach), Weakness in social participation (Lack of social engagement), Weakness in social trust (Lack of social trust), Financial and payment matters



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	Accountability Mechanisms of Knowledge Governance and Research	Knowledge Governance and Research at the Macro Level (Sociology of Research by the Science Institution)	Challenges in Measuring the Social Impact of Research ¹		4/04					
			Research Pathway ²		4/24					
			Establishing a Research Strategic Committee ³		4/16					
			Access to Knowledge (Stakeholders' Access to Research Results)		4/44					
			Extensive Stakeholder Participation ⁴		4/44					
			Participation in Decision-Making of Research Results		4/40					
			Stakeholder Participation in the Research Process		4/44					
			Practical Aspects of Participation and Collaboration in Research		4/44					
			Level of Stakeholder Participation in Research (Micro, Meso, Macro Level)		4/32					
Knowledge Production and Exchange ⁵	Knowledge Producers	Researchers and Scientists	The Role of Researchers in Research		4/48					
			Individual Characteristics of Researchers in Knowledge Creation		4/32					
			Strategies of Research Groups		4/16					
		Educational and Research Organizations and Centers	Organizational structures and characteristics		4/16					
			Organizational performance		4/32					
			Application of knowledge in the organization		4/40					
	Knowledge Users	Policymakers	Role Policy implementers		4/56					
			Characteristics of Policymakers							
			Characteristics of Policymaking							
			Encouragement of the use of research evidence in the decision-making system		4/68					
			Feeling of the need for research in decision-making ⁶		4/76					

¹ For example: Research attribution issues, Internationalization issue, Research causality, Time lag between research and impact

² Research Roadmap, From Initiation to Social Impact Expertise Path, Collaboration Path, Impact Path, Interactive Dissemination Path, Public Engagement Path

³ For example: Research Ethics Committees, Medical Services Advisory Committee, Inter-sectoral Coordinating Committees, Pharmaceutical Benefits Advisory Committee

⁴ For example: Collaborating with stakeholders, policymakers, and health managers

⁵ Knowledge exchange is the process of solving problems through collaboration between researchers and decision-makers, achieved by establishing communication and interactions.

⁶ Attention to patient needs, Stakeholder needs, Health needs, Common organizational needs, Knowledge needs



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		Stakeholders	Professional users (interested groups: individuals, organizations, communities, industries or economies)		4/36					
			End users (general public, citizens, public representatives)		4/24					
			Type of user group decision-making ¹		4/36					
			Types and Characteristics of User Groups		4/22					
		Knowledge Brokers and Managers	The role of knowledge intermediaries		4/48					
			The role of research promotion (promotion of social value)		4/44					
		Activities Based on Active and Effective Knowledge Dissemination	Dissemination of knowledge to peers		4/32					
			Social Orientation of Research in Knowledge Dissemination		4/32					
			Activities Related to Knowledge Transfer		4/16					
			Dissemination of Knowledge to Potential Users (e.g., Stakeholders, Policymakers, and Policy Implementers)		4/36					
			Public knowledge dissemination strategies ²		4/28					
		Activities Based on the Publication of Research Results	Purposeful sharing of research		4/36					
			How to communicate research findings		4/52					
	Knowledge Transfer Processes	Factors Facilitating Knowledge Transfer	Characteristics of researchers in knowledge transfer ³		4/36					
			Transfer infrastructures for accessing results through databases		4/40					
		Environmental Factors for Knowledge Transfer	Targeted transfer of research results to potential users		4/44					
			Facilitation of knowledge transfer		4/56					
			Transfer of knowledge from research		4/24					
Knowledge	Knowledge Distribution	Activities Based on	Interaction of knowledge users with each other		4/48					

¹ For example: Value-based decision-making, Policy-based decision-making, Based on policies and guidelines decision-making

² For example: Competence of Implementers, Expanding the Scope of Social Impact Assessment, Mandatory Regulations

³ For example: researcher commitment to transfer, knowledge transfer skills

⁴ a set of initiatives with the explicit aim of improving the conditions for the absorption and utilization of academic outputs. (I. Naidorf C.J. Knowledge utility: From social relevance to knowledge mobilization. 2014.) It involves interaction between policymakers and researchers, leading to mutual learning through the process of planning, production, dissemination, and application of existing or new research in decision-making.



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		Social Interactions	Type of social communication ¹		4/28					
			Specificity of appropriate communication system ²		4/28					
			Interactive process (transfer and exchange of knowledge between two parties)		4/24					
			Link between social needs and the university		4/64					
			Drivers of knowledge exchange ³		4/48					
		Activities Based on Social Networks	Knowledge Representation		4/36					
			Public and Scientific Social Networks		4/60					
			Collaboration Networks ⁴		4/44					
			Sharing Platforms ⁵		4/52					
			Digital Platform Connectivity Capacity ⁶		4/28					
Knowledge Popularization⁷	External Components of Knowledge Popularization	Social Impact of Research in Health (as a Long-Term Effect)	Impact on health status ⁸		4/60					
			Impact on economic indicators ⁹		4/60					
		Social Impact of Research in Organizations (as a Medium-Term Effect)	Impact on health determinants ¹⁰		4/56					
			Impact on education ¹¹		4/28					
			Impact on decision-making ¹²		4/44					
		Social Impact Research of (as a Short-Term Effect)	Social impact of research in the fields of Scientometrics		4/20					
			Impact on service delivery ¹³		4/72					

¹ For example: Scholarly Communication, Organizational Communication, Electronic Communication, Face-to-Face Communication, Communication between Researchers and the Community, Communication with Stakeholders, Public Communication (a one-way flow of information from the sponsor to the public), Social Communication (a two-way flow), Research Group's Communication with the Surrounding Environment.

² For example: University-community-industry interaction

³ For example: Stimulating public discourse, Incentives and privileges, Rewards

⁴ For example: Establishment of health and treatment networks and...

⁵ For example: Social media platforms, digital platforms (e.g., Medicine Africa)

⁶ Gathering geographically scattered individuals from different areas to align with shared objectives

⁷ Knowledge popularization is a concept that only finds its true meaning within the public sphere, and therefore, all societal actors must participate in it.

⁸ For example: Health and therapeutic impact, Expansion of medical knowledge, Digital health, Cultural impact, Technological impact (the effect of technology on product, process, and service innovation, and understanding the "how-to" of things)

⁹ For example: Economic impact and value creation, Patent registration (Patents), Third-stream activities, Research-based impact (articles, patent licenses, research-derived income)

¹⁰ For example: Direct impact and indirect impact, Impact at the individual level, Direct social impact, Community-based impact, Equity in the health system (Health system equity)

¹¹ For example: Educational impact, Scientific impact, Impact related to basic research

¹² For example: Political impact, Impact on policy documents, Impact at the intermediary and governmental levels, public health measures (Public health actions)

¹³ For example: Social impact (the contribution of research to a country's social capital), Stimulating new approaches to social issues or informing public debate and policymaking, Improved quality of life, Improved health, Safety and security, Social capital, Creation of



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Knowledge Utilization ¹			Social goals of research		4/32					
			Social return on research investment		4/20					
			Social benefits of research		4/28					
	Knowledge implementation ²	Behaviors Leading to the Development and Strengthening of Research	Allocation of research resources		4/56					
			Development and strengthening of research activities ³		4/44					
			Development and active performance of researchers ⁴		4/44					
			Development of individual and organizational networks		4/32					
			Improvement of public health and well-being		4/48					
		Behaviors Leading to Research Results in Health Promotion	Increasing social benefits ⁵		4/44					
			Improving disease treatment outcomes		4/64					
			Improving public services		4/48					
			Improving experience		4/28					
			Improving research impact		4/40					
			Improving clinical practice		4/40					
			Usefulness of knowledge		4/24					
	Knowledge Exploitation ⁶	Behaviors Leading to the Application of Research	Commercial and consumer outcomes of research ⁷ or research services		4/24					
			Marketing of research-derived knowledge		4/24					
			Pathways to research commercialization		4/28					
			Factors affecting knowledge translation ⁸		4/48					

social value, Service management-based impact ,Organizational social impact, Organizational impact (planning, work organization, management, and human resources), Symbolic impact (a significant impact identified by research users who have been interviewed)

¹ Knowledge Utilization is a process in which specific research-based evidence is put into practice

² A process focused on increasing the application of evidence from research by strengthening and appropriately supporting the implementation of changes in clinical practice or targeted behaviors, leading to health promotion.

³ For example: Strengthening the technical and methodological aspects of research with effect size, and enhancing resources in research development

⁴ For example: Development of individual skills, Strengthening collaboration among clinical partners, Professional development of medical specialists

⁵ For example: Economic benefit, Societal benefit (Benefit to society), Clinical application, Policy and legislative benefit, Benefit related to the advancement and development of knowledge

⁶ Knowledge Exploitation, a form of proper resource utilization, can take on various forms, from companies that use it to create a new product to those that sell it as a product (Antonelli, 2006). Knowledge exploitation means increasing a company's intellectual capital with existing knowledge (Anton and Yao, 2004; Massey et al., 2001).

⁷ For example: Pharmaceuticals, diagnostic tools, machines, and equipment

⁸ Interaction between researchers and stakeholders in various sectors from the selection of a research topic to its publication, in a way that enhances the potential for knowledge exploitation. In this constructive interaction, considering scientific and ethical aspects is the main basis for actions. an active and interventional process that encompasses all stages between the generation of new knowledge, its



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			Facilitating knowledge translation (using appropriate research language, presenting research results in a timely manner)		4/44					
			Structures and processes of knowledge translation		4/40					
			Implementation of clinical research		4/36					
			Translating knowledge into practice		4/56					
			Utilization of research outcomes		4/32					
			Promoting knowledge application		4/28					
			Practical and policy applications of research		4/48					
			Using research results		4/60					

If you have any further thoughts or reflections on the identified concepts and categories, we would be grateful if you could include them at the end of the questionnaire.

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The results of this questionnaire will be analyzed and sent back to you along with the second-round questionnaire within the next ten days. Thank you for your patience and for sharing your valuable insights.

Best wishes for your health and happiness.