



Code 02: First Round the Fuzzy Delphi Panel

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

Dear Dr. [Last Name],

The framework for the social impact of medical research utilization⁽¹⁾ refers to the design and validation of a conceptual framework that encompasses the basic themes of the social impact of medical research utilization. This includes the stages, steps, and basic themes from source selection to case study, as well as the rationale for their selection, their interconnections, and the influencing factors. It is evident that the results of such evaluations can enhance research utilization by policymakers and planners. These results serve as a framework for future studies in assessing knowledge popularization activities and other applied scientific fields. Therefore, it is essential to pay attention to its key dimensions for effectiveness.

It is noteworthy that in over thirty sources included in this research, as well as other reputable sources, several components are identified as key to the social impact of medical research utilization⁽¹⁾. These basic themes include knowledge governance and research, knowledge production and exchange, knowledge dissemination and transfer, knowledge mobilization, knowledge popularization, knowledge utilization.

Additionally, in the article by Diehr & Gueldenberg (2017), knowledge utilization approaches are categorized into five perspectives as an umbrella for covering knowledge utilization⁽²⁾. These approaches are summarized as knowledge management, knowledge production, knowledge transfer, knowledge outsourcing, and knowledge exploitation. Many studies have utilized these approaches⁽³⁻¹¹⁾. They can be found in the processes of effectively applying knowledge and converting knowledge into action.

Therefore, after approval from the professors, these categories have been accepted in the current research. Additionally, these five concepts are used only in the first and second layers (categories), while the rest of the structure is based on relevant literature.

In general, based on the dimensions of the knowledge spiral by Nonaka and Takeuchi¹ and the extracted components⁽¹⁾, 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.

Accordingly, while appreciating your cooperation, we kindly request that you allocate some of your valuable time to respond to the questions in the attached sheet. Please indicate your level of agreement or disagreement with the established criteria based on the indicators and examples provided at the end of the file, within the specified range.

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. Additionally, at the end of the process, a copy of the results will be provided to you.

Best regards.

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¹ SECI



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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): _____



First Round Questionnaire of Expert Participation on The Social Impact of Medical Research Utilization in The Fuzzy Delphi Panel

Contextual Themes	Global Themes	Organize Themes	Basic Themes	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					
			Transferring the research question					
			Research targeting					
			Research culture					
			Research training					
			Research environment					
			Research ethics considerations					
			Psychological factors of research ²					
			Research feasibility					
			Existence of research-related systems					
			Research management					
		Knowledge Governance and Research at the Meso Level (Researcher Actions by Universities and Scientific Institutions)	Research management and organizational factors ³					
			Research group strategies ⁴					
			Research funding systems					
			Identification of research streams ⁵					
			Knowledge acquisition (attracting knowledge-holders)					
			Identification of research dimensions ⁶					
			Research topic adaptation (adaptation of new policies and guidelines)					
	Accountability Mechanisms of Knowledge Governance and Research	Knowledge Governance and Research at the Macro Level (Sociology of Research by the Science Institution)	Research Pathway ⁷					
			Research Processes ⁸					
			Approaches Based on Research Processes ⁹					
			Establishing a Research Strategic Committee ¹⁰					
			Access to Knowledge (Stakeholders' Access to Research Results)					
			The Role of Researchers in Research					

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: research information systems, research laws and regulations

³ For example: the experience of the principal investigator, the size of the research group, and the required research budget.

⁴ For example: Research Transparency, Identification of the Research Problem, Selection of Appropriate Research Projects, Research Capacity, Social Capacity for Research

⁵ For example: Research Direction, Type of Research, Conducting Research, Research Quality

⁶ 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

⁷ Research Roadmap, From Initiation to Social Impact Expertise Path, Collaboration Path, Impact Path, Interactive Dissemination Path, Public Engagement Path

⁸ For example: Input, Activity, Output, Outcome, Impact

⁹ Process for Evaluating Scientific Publications, Process for Setting the Agenda for Impact-Based Research, Stakeholder Analysis Process, Communications Process, Implementation of the Social Impact Assessment Process

¹⁰ For example: Research Ethics Committees, Medical Services Advisory Committee, Inter-sectoral Coordinating Committees, Pharmaceutical Benefits Advisory Committee



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Knowledge Production and Exchange ¹	Knowledge Producers	Researchers and Scientists	Knowledge Creation by Researchers					
			Individual Characteristics of Researchers ²					
		Educational and Search Organizations and Centers	Organization type					
			Organizational framework					
			Organizational capabilities and advantages					
			Organizational structures and characteristics					
			Methods of understanding and achieving the organization's social value					
			Organizational performance					
			Application of knowledge in the organization					
	Knowledge Users	Policymakers	Policy implementers					
			Policymakers' lobbying efforts					
			Personal characteristics of policymakers ³					
			Characteristics of policy decisions ⁴					
			Policymakers' decision-making criteria (Economic and Social criteria)					
			Type of policymaking ⁵					
			Encouragement of the use of research evidence in the decision-making system					
			Feeling of the need for research in decision-making ⁶					
			Policy interventions					
		Stakeholders	Professional users (interested groups: individuals, organizations, communities, industries or economies)					
			End users (general public, citizens, public representatives)					
			Social users (research audiences, actors in the research process)					
			Individual characteristics of research users ⁷					
			User group characteristics (Context, Size, Expectations)					
			Type of user group decision-making ⁸					
			Responsiveness to research users					
			Knowing research users (Social and Health Stakeholders)					
			Conducting a workshop for research users					
			Research user oversight board team					
		Knowledge Brokers and Managers	The role of knowledge intermediaries					
			The role of research promotion (promotion of social value)					

¹ Knowledge exchange is the process of solving problems through collaboration between researchers and decision-makers, achieved by establishing communication and interactions.

² Individual Factors, Values and Attitudes, Motivation

³ For example: Policymakers' knowledge in clinical research, Policymakers' skills for analyzing and using research findings

⁴ For example: Types of Policy Decisions (group decisions, project managers' decisions, decision-making on health priorities) Decision Transparency

⁵ Health-related policymaking, public policy, Science policy, Politics and social justice

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

⁷ For example: Public knowledge of clinical research, Patient input knowledge, Patients experience

⁸ For example: Value-based decision-making, Policy-based decision-making, Based on policies and guidelines decision-making



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Contextual Themes	Global Themes	Organize Themes	Basic Themes	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
Knowledge Dissemination and Transfer	Knowledge Dissemination Processes	Activities Based on Active and Effective Knowledge Dissemination	Common forms of academic scientific production ¹					
			Membership of researchers and managers in associations					
			Participation in knowledge-based conferences					
			Workshop technologies (e-mail, video conferencing)					
			Presentation in workshops, seminars, conferences, posters, lectures					
			Professional publications and guides					
		Activities Based on the Dissemination of Research Results	Dissemination of knowledge from health research					
			Dissemination of knowledge to peers					
			Social orientation of research					
			Dissemination of knowledge to potential users ²					
		Activities Based on the Publication of Research Results	Shared responsibility for research dissemination					
			Public knowledge dissemination strategies ³					
			Peer review of similar research by academic peers					
			Knowledge sharing ⁴					
	Knowledge Transfer Processes	Factors Facilitating Knowledge Transfer	How to communicate research findings					
			Characteristics of researchers in knowledge transfer ⁵					
			Transfer infrastructures for accessing results through databases					
			Specificity of knowledge transfer evaluation systems					
		Environmental Factors for Knowledge Transfer	Factors affecting knowledge transfer ⁶					
			Multi-stage process of knowledge transfer					
			Targeted transfer of research results to potential users					
			Facilitation of knowledge transfer					
			Transfer of knowledge from research					
Knowledge Mobilization ⁷	Knowledge Distribution ⁸	Activities Based on Social Interactions	Interaction of knowledge users with each other					
			Type of social communication ⁹					
			Specificity of appropriate communication system ¹⁰					
			Continuous negotiation and dialogue					
			Interactive process (transfer and exchange of knowledge between two parties)					

¹ For example: Journal articles, Research abstracts, Research findings summaries, educational brochures and pamphlets

² For example: Stakeholders, Policymakers, Policy implementers

³ For example: Competence of Implementers, Expanding the Scope of Social Impact Assessment, Mandatory Regulations

⁴ For example: Sharing research findings, Sharing peer experiences, Targeted knowledge sharing

⁵ For example: researcher commitment to transfer, knowledge transfer skills

⁶ For example: Appropriate knowledge transfer tools, Knowledge transfer strategies, Knowledge transfer flow, Knowledge transfer budget

⁷ a set of initiatives with the explicit aim of improving the conditions for the absorption and utilization of academic outputs. (12. 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.

⁸ relates to the process of distributing and sharing knowledge across organizational levels through various techniques, individuals, and technologies.

⁹ 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.

¹⁰ For example: University-community-industry interaction



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Contextual Themes	Global Themes	Organize Themes	Basic Themes	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
			Link between social needs and the university					
			Drivers of knowledge exchange ¹					
		Activities Based on Social Networks	Knowledge Representation					
			Social and Scientific Networks ²					
			Collaboration Networks ³					
			Sharing Platforms ⁴					
			Digital Platform Connectivity Capacity ⁵					
	Knowledge Outsourcing	Activities Based on Social Participation	Collaborative partnership ⁶					
			Collaborative research ⁷					
			Extensive Stakeholder Participation ⁸					
			Participation in Decision-Making of Research Results					
			Stakeholder Participation in the Research Process					
			Criteria for Participation in Research Evaluation					
			Practical Aspects of Participation and Collaboration in Research					
			Level of Stakeholder Participation in Research (Macro Level, Meso Level, Micro Level)					
			Understanding Participatory Processes in Research					
Knowledge Popularization ⁹	External Components of Knowledge Popularization	Social Impact of Research in Health (as a Long-Term Effect)	Impact on health status ¹⁰					
			Impact on economic indicators ¹¹					
		Social Impact of Research in Organizations (as a Medium-Term Effect)	Impact on health determinants ¹²					
			Impact on education ¹³					
			Impact on decision-making ¹⁴					
			The role of social impact research					

¹ For example: Stimulating public discourse, Incentives and privileges, Rewards

² For example: Facebook, Twitter, Google+, LinkedIn, Sina Web, Pinterest, ResearchGate

³ For example: Establishment of health and treatment networks and...

⁴ For example: Social media platforms, digital platforms (e.g., Medicine Africa)

⁵ Gathering geographically scattered individuals from different areas to align with shared objectives

⁶ 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.

⁷ 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.

⁸ For example: Collaborating with stakeholders, policymakers, and health managers

⁹ Knowledge popularization is a concept that only finds its true meaning within the public sphere, and therefore, all societal actors must participate in it.

¹⁰ 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)

¹¹ For example: Economic impact and value creation, Patent registration (Patents), Third-stream activities, Research-based impact (articles, patent licenses, research-derived income)

¹² 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)

¹³ For example: Educational impact, Scientific impact, Impact related to basic research

¹⁴ For example: Political impact, Impact on policy documents, Impact at the intermediary and governmental levels, public health measures (Public health actions)



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Contextual Themes	Global Themes	Organize Themes	Basic Themes	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
		Social Impact of Research (as a Short-Term Effect)	Social Impact on scientometric fields ¹					
			Impact on service delivery ²					
	Internal Components of Knowledge Popularization	Activities Based on the Processes of Social Impact of Research	Balancing the social and scientific value of research					
			Social cohesion of research ³					
			Social goals of research					
			Social capital of research					
			Social return on research investment					
			The role of social outputs of research					
			Social interventions of research					
			Social benefits of research					
		Activities Based on the Assessment of Social Impact of Research	Research Evaluation Processes ⁴					
			Research Evaluation Systems					
			Health Technology Evaluation Indicators					
			Effective Components in Social Evaluation of Research ⁵					
			Recognition and Types of Social Values of Research ⁶					
			Challenges in Measuring the Social Impact of Research ⁷					
Knowledge Utilization⁸	Knowledge Implementation⁹	Behaviors Leading to the Development and Strengthening of Research	Allocation of research resources					
			Development and strengthening of research activities ¹⁰					
			Development and active performance of researchers ¹¹					
			Development of individual and organizational networks					
			Improvement of public health and well-being					

¹ For example: Altmetrics (liking, following, retweeting), Altmetrics barriers (data manipulation, intervening conditions, privacy), Quantitative evaluation metrics, such as the number of reviewed articles, journal impact factor, and citation rate, Number of citations and publications, Bibliometric metrics, such as citation analysis, article download counts, and surveys

² 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 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)

³ For example: A spirit of empathy and collaboration in the community/society

⁴ 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

⁵ 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

⁶ For example: Epistemological and professional value, Epistemological and objective dimension

⁷ For example: Research attribution issues, Internationalization issue, Research causality, Time lag between research and impact

⁸ Knowledge Utilization is a process in which specific research-based evidence is put into practice

⁹ 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.

¹⁰ For example: Strengthening the technical and methodological aspects of research with effect size, and enhancing resources in research development

¹¹ For example: Development of individual skills, Strengthening collaboration among clinical partners, Professional development of medical specialists



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Contextual Themes	Global Themes	Organize Themes	Basic Themes	Strongly Disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
		Behaviors Leading to Research Results in Health Promotion	Increasing social benefits ¹					
			Improving disease treatment outcomes					
			Improving public services					
			Improving experience					
			Social volunteer activities					
			Improving research impact					
			Improving clinical practice					
			Improving participation					
			Usefulness of knowledge					
			Professional services					
	Knowledge Exploitation²	Behaviors Leading to the Application of Research	Commercial and consumer outcomes of research ³ or research services					
			Marketing of research-derived knowledge					
			Pathways to research commercialization					
			Factors affecting knowledge translation ⁴					
			Facilitation of knowledge translation ⁵					
			Structures and processes of knowledge translation					
			Implementation of clinical research					
			Translating knowledge into practice					
			Utilization of research outcomes					
			Promoting knowledge application					
			Practical and policy applications of research					
			Using research results					

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.

¹ For example: Economic benefit, Societal benefit (Benefit to society), Clinical application, Policy and legislative benefit, Benefit related to the advancement and development of knowledge

² 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).

³ For example: Pharmaceuticals, diagnostic tools, machines, and equipment

⁴ 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 application, and its utilization to create a prognosis for society (13. Research CioH. Knowledge translation strategy 2004–2009: Innovation in action. Canadian Institutes of Health Research Ottawa; 2004.)

⁵ Use of appropriate research language, Timely delivery of research results