

Bridging research-policy gaps

An integrated approach

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Abstract: It is often difficult for policymakers to make informed decisions without evidence-based support, resulting in potentially ineffective policies. The purpose of this article is to advocate for collaboration and communication between researchers and policymakers to enhance evidence-based policymaking. The workshop hosted by the International Society of Environmental Epidemiology—Eastern Mediterranean Chapter further explores the challenges of connecting researchers and policymakers. The article highlights the gap between researchers and policymakers, attributed to different visions and objectives, time constraints, and communication issues. To strengthen the research-policy interface, strategies such as enhanced communication skills and early involvement of policymakers in research are suggested. The article proposes an integrated model combining the Collaborative Knowledge Model and the policy entrepreneurship mindset, emphasizing the co-creation of knowledge and evidence-based policy solutions. The use of this model can lead to the development of evidence-based policies that effectively address societal needs.

Keywords: Collaboration; Communication; Evidence-based policymaking; Integrated model; Research-policy interface

Introduction

Policymakers often face challenges when making decisions on complex issues without relying on evidence to help them make informed and objective choices. Instead, they might rely on political considerations, which can impact the decision-making process and potentially lead to less effective policies.¹

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By engaging with researchers, policymakers can access the latest research findings and expert insights, enabling them to develop policies that are grounded in rigorous evidence.²

Establishing a mutual relationship between researchers and policymakers is essential for effective policy development. Collaboration and communication allow for a better understanding of the respective needs, constraints, and priorities of both groups.^{3,4} This understanding builds trust and constructive exchange of knowledge, leading to more informed and inclusive policy decisions through the identification of missing elements in the research-policy interface to overcome potential challenges and limitations, while enhancing policy relevance and effectiveness.⁴

This identification process contributes to evidence-based decision-making by improving the quality of knowledge. Failure to address these missing elements can lead to ill-informed policies and hinder societal progress. However, recognizing these gaps brings long-term benefits, including innovation, problem-solving capabilities, and sustainable policies, and ensures that policies are grounded in reliable evidence, responsive to societal needs, and poised for long-term success.

On May 18th, 2023, the Eastern Mediterranean Chapter of the International Society of Environmental Epidemiology (ISEE-EM) hosted a workshop titled “Harmonizing Perspectives: Bridging the Gap Between Researchers and Policymakers and Identifying Key Missing Elements.” The workshop aimed to discuss the challenges associated with connecting researchers and policymakers, emphasizing the importance of collaborative efforts and evidence-based approaches to achieve impactful

What this study adds

Our article explores the essential need for collaboration and communication between researchers and policymakers to ensure evidence-based policymaking. It suggests an innovative integrated model combining the Collaborative Knowledge Model and the policy entrepreneurship mindset, emphasizing the co-creation of knowledge and evidence-based policy solutions. By adopting this model, we aim to bridge the gap between researchers and policymakers, leading to evidence-based policies that effectively address societal needs.

policy outcomes. The objectives included promoting the use of well-founded research evidence to enhance the influence of science on policy making.

Therefore, every attendee was encouraged to nurture the discussion and exchange ideas about the key themes, including the real issue of gaps and miscommunications, the missing evidence to harmonize the mindset and perspectives between researchers and policy makers, and how to bridge the defined gap.

This commentary article extends the discussions and outcomes of the workshop, presenting a novel model to bridge the divide between researchers and policymakers. By sharing valuable insights and findings, it advocates for evidence-based policymaking, thereby improving the quality of decision-making and addressing societal needs and challenges. The workshop serves as a catalyst for future discussions, and this article can contribute to forthcoming initiatives, projects, and policy developments focused on fostering effective research-policy collaborations. Ultimately, these collaborative efforts aim to enhance citizen well-being and achieve more efficient and impactful outcomes.

The gap between researchers and policymakers and key missing elements

Scientists and policymakers often have different objectives, priorities, and timelines, leading to potential conflicts and challenges. Scientists and policymakers care about citizens' well-being. Scientists want to find new knowledge and explore hypotheses. They aim to enhance their scientific records. Their vision and objectives are more short-term. Policymakers focus on overall prosperity. Their electoral programs should contain long-term visions. They create jobs and boost the economy. One of their priorities is to improve their political records. Scientists base their decisions on scientific evidence, whereas policymakers consider political interests and people's reactions. Scientists require time to answer research questions, while politicians often need quick answers, especially in crisis situations.

The successful use of research findings by policymakers is hampered by several obstacles. These impediments include budgetary restrictions, time restraints, a lack of communication, and inaccurate reporting of research findings. Between scientists and policymakers, knowledge flow may be troubled by cultural and institutional constraints. In some situations, politicians might not consult scientists, or scientists might not refer to policymakers to make the necessary adjustments. The disparity is also exacerbated by variations in educational backgrounds and a lack of integration opportunities.

Ineffective communication and collaboration between academics and policymakers can result from the intricacy and technical nature of research findings, which can also cause misunderstandings. Politicians employ regional dialects and a variety of approaches, whereas scientists frequently publish their findings in technical language and in English, which may not be the primary language used in the country. These difficulties may be made worse by translation problems.

Moreover, in many countries, policymakers move from one position to another more quickly than researchers, who usually work for many years in a specific field of interest. Then if rigorous long-term goals are not set at both sides, it is difficult to collaborate in the long run and implement and pursue sound scientific policies, which need constant financial and political support. Social networks can help with disseminating knowledge, but this will not be enough for action, especially in low-income settings.

Consequently, policymakers might make decisions based on information that is out-of-date or inaccurate because they lack access to timely and pertinent research findings. When policies are based on outdated information, their legitimacy and credibility are undermined. Thus, the creation and application of evidence-based policies are disadvantaged by the lack of engagement and collaboration between researchers and policymakers.

Furthermore, social actors play a significant role that may complicate the researcher-policymaker relationship. For instance, civil society organizations and their activities exert influence on policies through local contributions and their impact on citizens. In certain countries, civil groups and nongovernmental organizations are actively engaged in sharing and implementing strategies. In India, for example, civil society led the behavioral change management within the women's community at the village level as part of the implementation of HIV/AIDS policies. This underscores the importance of an expanded collaborative effort involving various stakeholders, including researchers, policymakers, and civil society.⁵ The gap between scientists and decision-makers can have serious repercussions in many industries. Progress and sustainability are slowed down by the failure to effectively translate scientific knowledge into policy, particularly in interdisciplinary and complicated sectors such as public health. A prime example is the global issue of climate change and its implications for environmental and human health, where unscientific judgments proved its detrimental effects. To bridge this gap, effective collaboration, better communication, well-defined visions and objectives, concrete suggestions, and workable solutions are required. A more effective model is needed, one that fosters collaboration and inclusivity not only between scientific and governmental bodies but also involving all interested stakeholders. Policymakers should be encouraged to base their decisions on scientific evidence and social needs, while scientists should align their research with policymakers' needs. Ignoring up-to-date science during decision-making processes can risk human health and well-being.

Strengthening the research-policy interface

Effective collaboration between researchers and policymakers depends on the convergence of their shared objectives within specific domains of expertise. The degree of alignment varies significantly across different sectors. For instance, the Ministry of Health and epidemiologists often exhibit a notable level of common ground due to their shared emphasis on public health outcomes and reliance on scientific evidence. Conversely, the alignment might be less pronounced between the Ministry of Agriculture and epidemiologists owing to distinct priorities and objectives within their respective domains. However, still, all scientists have something in common with decision-makers. To optimize collaborative efforts, it is imperative to pinpoint the specific areas where these differences and commonalities intersect. This targeted approach allows for the identification of shared objectives and overlapping expertise, particularly in fields such as health policy development or environmental science initiatives. Highlighting these specifics provides a comprehensive understanding of how the collaboration between scientists and policymakers can be strategically structured to address mutual objectives while acknowledging where the visions may diverge.

Practically, researchers need to receive instruction and experiential training to develop their understanding of the policy-making process, communication skills, and engagement.⁶ Including policy- and decision-makers early in research increases research's credibility and facilitates the dissemination and acceptability of study findings.⁷ Establishing a two-way dialogue, involving decision-makers and researchers, and making research accessible to policymakers are essential steps.⁸ Researchers and policymakers should co-exchange knowledge through interaction, collaboration, and partnership in policymaking activities and research training programs, with evaluation and outcome implications.^{6,9,10} Researchers, policymakers, and all stakeholders should meet directly to discuss research priorities in a country, involving various sectors and bodies. A long-term plan should be developed, focusing on policymaking, implementation, and research activities and making the roles and responsibilities of all parties clearly defined.¹¹

In some African countries, such as Nigeria, South Africa, and Zambia, researchers and policymakers have shown successful

collaborations in tobacco control, knowledge transition, and financial support to establish legislation.^{12–15} In Nepal, this collaboration was meaningful in the hypertension and diabetes prevention research program.¹⁶

Fostering bridges between researchers and policymakers enhances understanding and knowledge.¹⁷ Trust is crucial for building respectful relationships, enabling effective collaboration, and connecting relevant evidence to policymakers.^{18–20} Various strategies, such as written research summaries, policy briefs, outreach tools, and oral presentations, can facilitate information exchange between researchers and policymakers. Collaboration is essential to overcome complex problems such as climate change, air pollution, or even the recent COVID-19 and its impacts and address pressing issues where global leaders agree on the importance of scientific research cooperation.²¹ However, no universal framework exists for successful research communication or collaboration.

Examples of some existing tools and initiatives are the research-to-policy collaboration model, founded in 2000, which focuses on capacity building and collaboration between researchers and policymakers.⁶ Also, the third-party organizations and platforms aim to enhance evidence-based decision-making by facilitating knowledge creation, sharing, and use, as well as fostering relationships and capacity building.²² Numerous organizations have drawn remarkable success stories in effectively addressing global challenges while fostering collaboration between researchers and policymakers. For instance, an illustration can be found in the Climate and Development Knowledge Network (CDKN, https://unfccc.int/playground-20/level-2/level-3/climate-and-development-knowledge-network-cdkn?gclid=Cj0KCCQjwqs6lBhCxARIsAG8YcDi0C7n9HLu2P6CI1zzKIRiXLz4Zm0DugJ8MsjkiZnWB23gOTpDMrCoaAtnwEALw_wcB), which uses science to aid in the creation and implementation of climate-friendly development policies, thus empowering developing nations with the tools to combat climate change. Equally worthy of mention is the Global Alliance for Vaccines and Immunization (GAVI, <https://www.who.int/europe/about-us/partnerships/partners/global-health-partnerships/gavi-alliance>), which plays a pivotal role in ensuring that low-income countries are not deprived of vital vaccines. Through fruitful partnerships among researchers, policymakers, and stakeholders, GAVI ensures that these countries have access to life-saving immunizations. Similarly, the Climate and Clean Air Coalition (CCAC, <https://www.cca-coalition.org/en>) has made remarkable progress in improving air quality. By fostering collaboration among various stakeholders, facilitating the exchange of knowledge, and implementing innovative strategies such as the Kigali amendment, CCAC strives to gradually phase out hydrofluorocarbons, thus achieving a global goal of tackling climate change and enhancing air quality. These projects and initiatives owe their success to principles such as collaboration, capacity building, knowledge sharing, long-term vision, well-defined objectives, innovative strategies, pilot projects, and adaptability. Thus, nowadays, many third-party funding organizations condition funds on the existence of a clear vision for collaboration between researchers and policymakers. An example is the Global Environmental and Occupational Health (GEOHealth) hubs program (<https://www.fic.nih.gov/News/GlobalHealthMatters/may-june-2019/Pages/global-environmental-occupational-health-hubs-geohealth.aspx>) which supports the development of institutions in low- or middle-income countries serving as regional hubs for collaborative research, data management, research training, curriculum and outreach material development, and policy support around high-priority local, national and regional environmental and occupational health threats. This program gave rise to seven GEOHealth Hubs including in Africa, Asia, and Middle East and North Africa (MENA) regions. One of the main objectives of the GEOHealth Hub MENA, for example, is to develop evidence-based policy recommendations that promote effective adaptation to and mitigation of climate-related hazards, taking into account the expected health and economic gains, costs, and feasibility of these measures in the participating

countries (GEOHealth Hub MENA, <https://hwsph.ucsd.edu/research/programs-groups/geo-health-hub.html>). Another example is the success of the Convention on Long-range Transboundary Air Pollution of the United Nations Economic Commission for Europe which is attributed to the close cooperation between scientists and decision-makers both involved to negotiate the international agreement. The willingness of scientists and decision-makers to jointly analyze the implications of implementing various policies to reduce air pollution is what makes the convention successful.²³

In addressing complex challenges such as climate change and air pollution, it becomes imperative to shift the focus toward promoting robust interactions between science and society. This shift aims to reach a harmonious balance between scientific excellence, societal pertinence, and political acceptance. It is no longer solely official experts who possess the knowledge. A broader and more inclusive approach is vital.²⁴ The North Carolina Office of Strategic Partnerships, for example, develops, launches, and strengthens partnerships between the state government and the state's research and philanthropic sectors. Office of Strategic Partnerships collaborates with state officials and nongovernmental partners on priority policy issues, creates and convenes networks of public sector and research experts, and offers a variety of learning and engagement opportunities to stakeholders from all sectors. These initiatives assist the state in strengthening ties with those with external research expertise while also increasing internal agency capacity to generate and use evidence to improve policy and programmatic functions.

Another example is citizen science (CS) projects that are primarily concerned with monitoring air quality with low-cost sensors. CS projects are practices in which scientists and citizens collaborate to address a pressing issue by generating new knowledge and information.²⁵ It has been observed that CS projects can produce relevant results, improve knowledge exchange between scientists, citizens, and policymakers, and have a positive impact on the science-policy-society interface.^{24,26}

Despite these best practices and initiatives, some collaborations are not easily successful, and there is a significant gap between research, policy, and practice, particularly at the country level in low- or middle-income countries.⁷ Researchers have noted a gap between research and practice, mainly in health care, management, nursing, and education.^{27–29} In addition, and in some cases, despite researchers' efforts, policymakers have been unable to translate evidence of the seriousness of some complex scientific topics and the need for action into effective policy implementation. A case study would be the situation of air pollution in many developing countries. Although there is ample evidence that air pollution is hazardous for human health, using fossil fuels is still pursued, due to several reasons, including spending less money for energy production, using the available infrastructure, and keeping workers' jobs. Indeed, many challenges remain, such as ambiguity, balancing priorities, lack of empirical approaches, and metrics for tracking progress.³⁰

During the ISEE-EM workshop, participants engaged in thoughtful deliberations about these diverse constraints. The issue was examined through a scientific lens, with an emphasis on the value of personal responsibility. This approach underlines the acknowledgment that a responsible perspective is not only essential but also a foundational aspect of addressing these challenges effectively. The workshop subsequently suggested an integrated model, more inclusive with an end in mind for interdisciplinary dialogs.

Promoting an integrated model: from a collaborative knowledge model to policy entrepreneurship

Besides suggesting the tools, mentioned above, to strengthen the Research-Policy Interface, participants immersed themselves in a captivating and stimulating discussion centered around

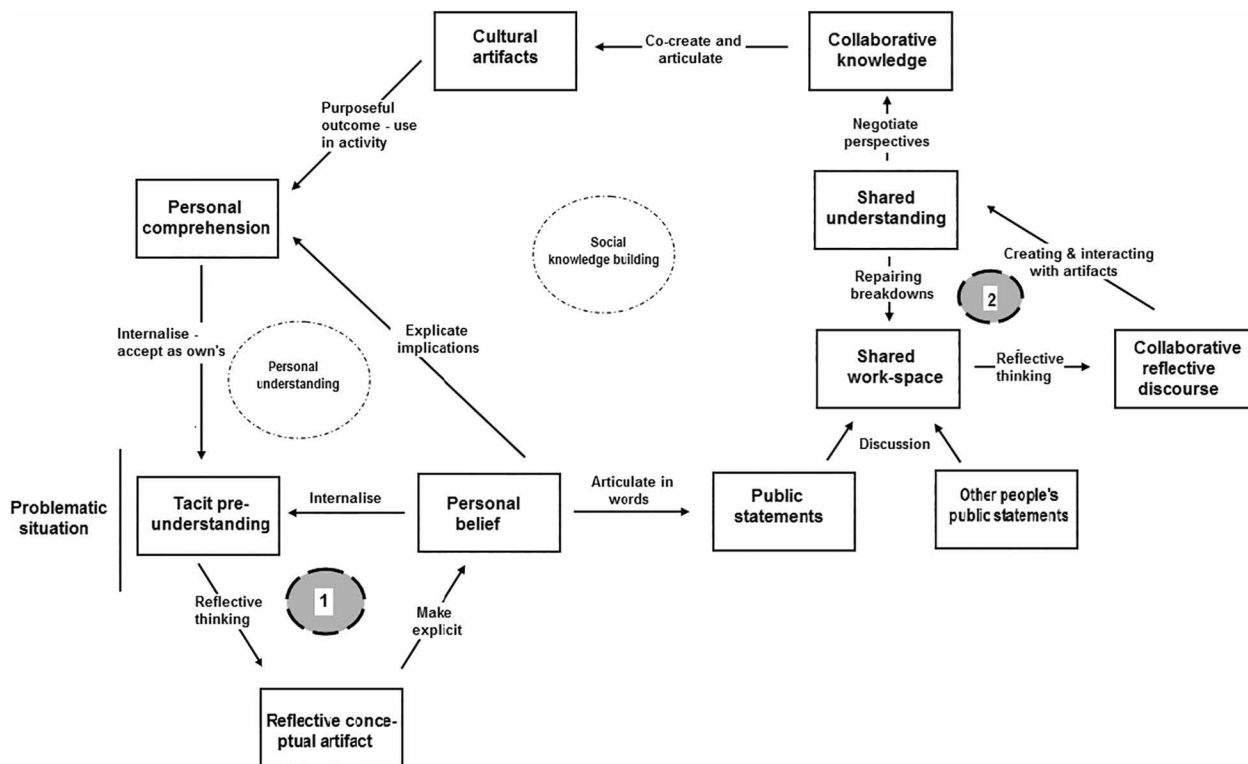


Figure 1. The Model of CKB process³⁴.

an innovative and integrated model designed to empower researchers in effectively meeting the demands of policymakers. This model encompasses the entire research journey, guiding researchers from the initial stages of formulating a comprehensive collaborative knowledge strategy to the ultimate aspiration of embracing a policy entrepreneurship mindset. Along this transformative expedition, researchers navigate through various stages that prioritize knowledge co-creation and sharing, ensuring a seamless flow of information and ideas among stakeholders.

From a comprehensive collaborative knowledge model...

At the heart of this comprehensive Collaborative Knowledge Model (CKM) lies the understanding that knowledge building is inherently social and interactive, taking on diverse forms but always with the goal of collectively enhancing understanding.³¹ The CKM in social science embraces an approach that emphasizes collaboration, dialogue and shared knowledge creation among researchers, practitioners, policymakers, and other relevant stakeholders. It represents a shift from the traditional top-down knowledge dissemination approach, where researchers generate knowledge and disseminate it to end-users. Instead, it recognizes the value of diverse perspectives and fosters the active involvement of various stakeholders throughout the research process. The CKM emerges as the outcome of the Collaborative Knowledge Building process, which was initially introduced by Scardamalia and Bereiter³² and subsequently refined by Stahl³³ and Signh.³⁴ Some models exist in the literature, such as the two-way secondment model used for enhancing the evidence-to-policy-to-action processes, notably between universities and the Ministry of Health in Nigeria.¹² Alternatively, the continual engagement model emphasizes strategic and periodic engagement with collaboratives ranging from local community leaders to global policymakers, including scientists. The

science here gives knowledge according to the needs of both community and policymakers.³⁵ Nevertheless, the CKM was adopted for its comprehensive cycle of personal development. It places a strong emphasis on individual reflective thinking and the creation of reflective conceptual artifacts. This involves linking new information from the different stakeholders with personal experience and existing knowledge and frameworks. Additionally, the model takes into account the personal beliefs of scientists, which fosters a strong sense of motivation to drive scientific projects to success including through the cultivation of necessary collaborations (Figure 1).³⁶

Implementing the CKM in the realm of scientific research entails researchers embarking on collaborative partnerships with practitioners, policymakers, and communities right from the start, aiming to tackle the intricacies of their research topics. The objective is to establish an initial foundation of holistic shared and collective knowledge surrounding the subject matter under investigation. Researchers may find the establishment of a shared workspace as in the CKM (Figure 1) challenging, however, they can overcome this hurdle by actively fostering the two-way knowledge exchange. This can be achieved by being on standby mode, and constantly exploring opportunities to meet with different stakeholders in conferences, workshops, and other relevant events. By proactively engaging with practitioners, policymakers, and communities, researchers contribute evidence-based understanding, while stakeholders offer their contextual expertise and lived experiences. These methods ensure the active involvement of stakeholders throughout the process, starting with the co-identification of the problem and refinement of the research topic.

...To a policy entrepreneurship mindset

In his influential book "Agendas, Alternatives and Public Policies," Kingdon presents a comprehensive framework for

understanding the complex and unpredictable nature of the policy-making process. He highlights the interplay of three interconnected streams: problems, policies, and politics.³⁷ According to Kingdon, problems act as the driving force behind policy-making. When a problem gains attention and becomes salient, it enters the “problem stream,” which represents issues considered significant by policymakers and the public. The problem stream is dynamic, with issues constantly entering and exiting based on their level of salience. The “policy stream” is the second component, encompassing potential solutions to the problems identified in the problem stream. It is also subject to change, influenced by factors such as the availability of solutions, the strength of interest groups, and the beliefs of policymakers. The third stream, the “politics stream,” consists of political events, including elections, that can influence the policymaking process. These political events have the capacity to reshape the problem stream, the policy stream, and the broader political climate surrounding policymaking.

Kingdon argues that policy change occurs when all three streams converge at a specific moment, which he terms a “policy window.” During this critical window, policymakers have a unique opportunity to implement changes that might otherwise be challenging. This necessitates the presence of innovative ideas to address public problems, highlighting the essential role of policy entrepreneurs.^{37,38} During the COVID-19 crisis, for example, a “policy window” emerged. Seibert and his team emphasized this opportunity for voluntary sector peak bodies to demonstrate policy entrepreneurship. They could achieve favorable policy outcomes and showcase their value to members, government, and other stakeholders.³⁹

According to Lynn Ross in his book “Policy Entrepreneurship: A Guide to Shaping and Understanding Policy,” policy entrepreneurship involves the identification, development, and promotion of new policies or ideas to solve public problems. Policy entrepreneurs play a crucial role in shaping and understanding policy, providing a framework for individuals and organizations to effectively engage in policy entrepreneurship. They are instrumental in driving change and fostering innovation in public policy by initiating and advocating for new policies.⁴⁰

During the workshop, participants delved into the concept of researchers, mainly in the public health sector, being prepared and ready for a “policy window” or, in other words, being policy entrepreneurs. Starting from the CKM, researchers must identify public problems as the foundation for their research topics. The end-journey of every research is the contribution to stakeholders, which lies in presenting a policy proposal that serves as a basis for a political strategy to be implemented and evaluated for its effectiveness. However, this endeavor is not without challenges, including resistance from existing stakeholders, limited resources, and political ambiguity. Overcoming these obstacles requires perseverance, collaboration with stakeholders, fluent communication, and a constant flow of information.

At the end, the workshop was assessed, and participants expressed their interest to further explore the whole model and how the CKM framework and the policy entrepreneurship concept can be practically projected on research topics and used by researchers. Essentially, more practical workshops will follow to explore the tools for implementing the suggested integrated model. Various methodologies will be explored, including outcome mapping, which is a valuable and participatory tool for planning, monitoring, and evaluating development initiatives aimed at sustainable social change.⁴¹

Conclusion

The workshop titled “Harmonizing Perspectives: Bridging the Gap Between Researchers and Policymakers and Identifying Key Missing Elements” served as a platform for fostering productive discussions and facilitating the exchange of ideas. Its

overarching objective was to discuss collaboration between researchers and policymakers, with a particular emphasis on how researchers can help setting effective policymaking. This commentary paper summarizes the main discussion in the workshop. It introduces an integration of two influential models: the CKM and the policy entrepreneurship mindset. The CKM, as a basic component, underscores the tremendous importance of collaborative partnerships and the co-creation of knowledge among diverse stakeholders, including researchers, practitioners, policymakers, and communities. By actively involving these stakeholders throughout the research process, researchers lay the groundwork for shared and collective knowledge that ensures the pertinence and impact of their work. Furthermore, the policy entrepreneurship mindset acknowledges the pivotal role of researchers as policy entrepreneurs, instrumental in driving transformative change and innovation within the realm of public policy. By identifying public problems and proposing evidence-based policy solutions, researchers possess the means to meaningfully contribute to the policymaking process and advocate for substantial policy amendments. Overcoming obstacles such as stakeholder resistance and limited resources necessitates the attributes of resilience, collaboration, and effective communication. The integrated model outlined in this paper offers a comprehensive framework for bridging the prevailing gap between researchers and policymakers. By adopting this model, researchers have the potential to amplify the impact of scientific research on policymaking, eventually facilitating evidence-based policies that adequately address the pressing needs and challenges of society. Looking toward the future, it is recommended to further explore the integrated model and delve into how it can be practically implemented in research and policymaking initiatives. In conclusion, the amalgamation of the CKM and the policy entrepreneurship mindset holds immense promise in bridging the gap that currently exists between researchers and policymakers.

Conflicts of interest statement

The authors declare that they have no conflicts of interest with regard to the content of this report.

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