

Designing an Analytical Framework for Measuring Knowledge Mobilization in Higher Education Institutions in the Philippines

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Abstract: The study aims to design a framework for measuring the effectiveness of knowledge mobilization (KMb) in higher education institutions (HEIs) in the Philippines. The said design is intended to guide and strengthen the research efforts and research capability of HEIs that have been mandated by the Commission on Higher Education (CHED) to lead in the conduct of technology-directed and innovative/creative research that is locally responsive and globally competitive and to ensure that the research outputs are presented and distributed to, and utilized by, their respective internal and external stakeholders. The exploratory sequential mixed methods design was used starting with collecting and analyzing qualitative data obtained from a mini knowledge audit using open-ended questions. The instrument was given to 17 respondents from HEIs in the National Capital Region via online following health and safety protocols. These respondents were either research directors or project research leaders of their respective HEIs. A content analysis of qualitative data was used to guide the researcher in designing a framework for measuring the effectiveness of knowledge mobilization in HEIs in the Philippines.

Keywords: Exploratory sequential mixed methods, Analytical framework, Knowledge mobilization, Mini-Knowledge audit, Knowledge mapping, Measuring.

1. Introduction

Schools of higher learning are the moving force behind a knowledge-based society and are among the institutions entrusted to create, communicate, distribute, and utilize knowledge (UNESCO Asia and Pacific Regional Bureau for Education, 2002 as cited in Knight, 2014). Thus, the Commission on Higher Education (CHED), the government agency created to supervise all higher education institutions (HEIs) in the country through the passage of Republic Act 7722, introduced measures to support a knowledge-based economy, namely: (1) Identification of intervention measures to increase the quality and quantity of research outputs of HEIs; (2) Development of the National Higher Education Research Agenda (NHERA), which provides the policies, directions, priorities, and thrusts of Philippine higher education research in the medium and long term; and (3) Establishment of more partner institutions/agencies for research capability training.

HEIs are expected to produce knowledge resources to contribute to the economic growth of the country (Rodrigues, Gupta, & Carlson, 2015). The knowledge resources they create, develop, and produce through research and development have to be effectively and efficiently mobilized to serve the organization, the community, and the country and ensure that “knowledge [is] put into action; action without knowledge is dangerous” (Bennet & Bennet, 2007).

2. Statement of the Problem

The Commission on Higher Education (CHED) and the Department of Science and Technology (DOST) have worked together to provide HEIs research funding, promote a culture of research, and connect them with industry partners to solve specific problems in the community. However, it is difficult to determine the effectiveness of this effort because there is no significant measuring tool that can assess the knowledge mobilization (KMb) of HEI research results in the Philippines. Likewise, it is critical to understand the current process of KMb and the effectiveness of that process in supporting utilization of the research results. To support this need, this study focuses on designing an analytical framework for measuring the effectiveness of knowledge mobilization (KMb) in HEIs. This study aims to design an analytical framework for assessing the effectiveness of KMb in Higher Education Institutions (HEIs) in the Philippines. This research will answer the primary question and secondary question to support the discovery of the solution set for the primary question:

- How can the effectiveness of the KMb in HEIs be assessed?
 - What is the current state of the mobilization of research results in Philippine HEIs?
 - How can the mobilization of research results in HEIs be measured?

3. Scope of the Study

This analytical framework will guide in effectively mobilizing research results of HEIs. Specifically, the outcomes of the KMB analytical framework will:

- Improve research mobilization. The KMB analytical framework will guide researchers in enhancing their research mobilization capabilities.
- Value the culture of research. It will promote research habit in HEIs and encourage continuity of research not only to advance their career but also challenge them to provide solutions to existing problems.
- Support funding for research infrastructure. The framework design will assist policymakers in formulating guidelines on allocating resources for research infrastructure.
- Create a framework designed for usability and leveling up of research results. The framework design will lead to better dissemination and implementation of research results which will facilitate collaboration among stakeholders and may further lead to developing a feedback mechanism that will be useful for further studies.

4. Related Literature

Knowledge: Knowledge is the only meaningful resource today to create value and wealth in the organization (Drucker, 1993 as cited in Omotayo, 2015). Although the traditional factors of production – land, labor, capital, and entrepreneurship – remain, they have become secondary since they can be obtained easily, provided there is knowledge. It is the utmost asset of an organization, a component of intellectual capital (Constantine, 2007 as cited in Akhtar et. al, 2015). For purposes of this paper, knowledge is considered a product of human thinking, articulated through research and development to create value to the potential players such as policy-makers, decision-makers, and practitioners. It can be used to create or increase the value of other forms of capital (Brenca & Gravite, 2013).

Knowledge Audit: Knowledge audit is an investigation conducted by an institution to establish the nature of information it has produced, the identity of the person/s who discovered it, and the manner in which the institution disseminates, stores, or uses it. It goes beyond mapping of available information as it fulfills the needs of a particular institution; thus, it also includes an evaluation of the level or status of technology of the specific institution, the manner in which the institution generates, uses, and supports efficient sharing of information, and the work ethic and culture of the employees in the workplace (Bennet & Bennet, 2004; Tiwana, 2000 as cited in Mohapatra et. al., 2016).

Knowledge Mapping: Knowledge mapping is an important action in any strategy involving knowledge management and the first step in conducting a knowledge probe (Davenport & Prusak, 2000; Tiwana, 2000 as cited in Mohapatra et. al., 2016). It is an inventory of vital information the institution has gathered to help people gain access to knowledge and proficiency to perform their tasks. It gives a complete record of the nature of information found in the institution, establishing its location within the institution, and disseminating a list or pictures that reveal to users the location of the information (Davenport & Prusak, 2000 as cited in Lee, 2013).

Knowledge Economy and Knowledge Societies: Knowledge economy has become a significant element in all economic activities in most developed nations since it is a system of utilization and creation based on intellectual capital that can maximize scientific discoveries and basic and applied research (Hayes, 2020). It depends significantly on intellectual capabilities (intangible assets) such as a worker's knowledge or intellectual property (e.g., licenses, trademarks and copyrights) rather than natural resources or physical contributions (tangible assets, e.g., land, vehicles, equipment, and inventory). In a knowledge economy, products and services that rely on intellectual capability and advancements in technical and scientific fields empower development and economy (Hayes, 2020).

Academic institutions, organizations engage in innovative work, software engineers creating new programming, internet searchers for information and wellbeing, and workers utilizing advanced information to improve medicine are components of a knowledge economy (Hayes, 2020).

Knowledge society makes knowledge accessible to all towards economically and socially reliant communities confident of their capacities to generate scientific and technological knowledge (Ruser & Stehr, 2017) for the advancement of human life (Castelfranchi, 2007 as cited in Arocena et. al., 2015).

5. Higher Education Institutions (HEIs)

Higher education includes all types of studies, exacting applied work (e.g., in medical schools and dental schools), training, or training for research at the post-secondary level provided by educational establishments that are approved as institutions of higher education by competent state authorities (UNESCO, 1993 as cited in Scott, 2016). It is “a level of education provided by universities, vocational universities, community colleges, liberal arts colleges, institutes of technology, and other collegiate level institutions that award academic degrees or professional certifications” (IGI Global, n.d., para. 1).

There are 1,871 higher education institutions (HEIs) in the Philippines offering undergraduate or Bachelor degree programs, graduate degrees like the master’s diploma, and doctoral programs (and postgraduate level). Almost 88% of HEIs are privately owned and managed, the rest are state-run or managed by local governments such as city colleges and polytechnics.

Knowledge Mobilization: Knowledge mobilization (KMb) includes all activities and products that help ensure research utilization and usefulness. It is an emerging field of work which draws from many disciplines and perceptions such as participatory action research, communications, sociology, knowledge theory, usability, education, and psychology (Community First, 2014).

KMb conveys existing knowledge into effective use (La Velle & Flores, 2018). It includes efforts to narrow the differences between policy research and practice to improve results. It also involves knowledge sharing among research producers such as university researchers and research users, including professionals and communities or others whose works can use the research findings and the assistance of third parties (Levesque, 2011 as cited in Greenhalgh & Fahy, 2015). KmB does not only transfer knowledge to stakeholders, but it also embeds knowledge generation and knowledge use within the core structure of communities and organizations (Bennet & Bennet, 2007).

Hence, it is necessary to measure KmB and its utilization and policy impact to ensure that knowledge is put into practice and to strengthen KmB of other educational institutions, researchers, and industry stakeholders. A research conducted on the outputs produced by HEIs sounded a call for mechanisms to monitor and evaluate research utilization (Fetalvero, 2010 as cited in Tamtekin Ayudin, 2017). This observation underscores the relevance of evidence-based practice in measuring KmB in the community.

Knowledge Mobilization Processes and Application: The KmB process involves research and education with the stakeholders as partners bound by a mutual objective. This process may apply efficiently to a specific KmB program using the appropriate approach to generate value by transporting the knowledge of an expert to a local situation (Bennet & Bennet, 2007). Several KmB models focusing on KmB process are presented in this study.

Generic KmB Process Model: Bennet and Bennet (2007), enumerated the eight generic knowledge mobilization process as follows:

- Identify the situation (problem, issue, opportunity).
- Gather information about the situation and its context.
- Understand the situation using information, experience, and related sources.
- Consider theoretical knowledge in the context of the situation.
- Apply practical knowledge learned from experiences or related situations.
- Pursue a set of actions.
- Be conscious of new situation that may emerge from the actions.
- Provide feedback to assess the effectiveness of actions made in achieving the desired goal and the opportunity to change or supplement those actions as needed.

KmB Knowledge from a Mobilization Whole-System Perspective: This model emphasizes research policy and practice. The Whole-System Perspective is composed of (1) policymaking; (2) research production; (3) research mediation; and (4) research use of online programs, social media platforms, and internet engines for innovation and engagement.

This model differentiates policy-making context from practitioner context to address the purpose, kinds of work, and time periods involved in decision making of the two groups. The KmB/WPS model incorporates Lavis’ et al. (2006) research models with Levin’s (2004) model, articulating the research production domains as

“producer-push efforts,” the research use domain as “user-pull efforts” and the research mediation domain as “linkage and exchange efforts” (Cooper, 2015b).

Knowledge Mobilization Strategy: The KMb toolkit diagram generates an effective KMb strategy regardless of the stage you are in. The seven components of the research process are: (1) identify and connect with end-users, (2) develop research topic, (3) design and plan project, (4) manage project, (5) interpret results, (6) communicate and disseminate findings, and (7) evaluate success (Networks of Centres of Excellence of Canada, 2015).

Potential Players: Since knowledge is context-sensitive and situation dependent (Bennet & Bennet, 2007), KMb is interdisciplinary, depending on how it touches the situation or what the stakeholders’ requirements are. Stakeholders are the actors with concerns on the project who can provide insight on the process while decision-makers influence the implementation process (Varvasovsky & Brugha, 2000 as cited in Boaz, 2018). They include organizations and individuals, as well as different individuals within the organizations.

The potential players model (Figure 1) shows the group of practitioners, advocates, and policy makers/decision makers at the center between the researchers and the target audience to signify their role as partners. Consequently, different levels of interaction and engagement take place between the partners – the group of practitioners, advocates, and policy makers/decision makers on one hand and the target audience on the other hand (Bennet & Bennet, 2007). Working with other stakeholders, the researchers conduct the study that underpins the needs of the community. The general public in the model is the beneficiary of the research result whose receptivity to the research determines the success of the project.

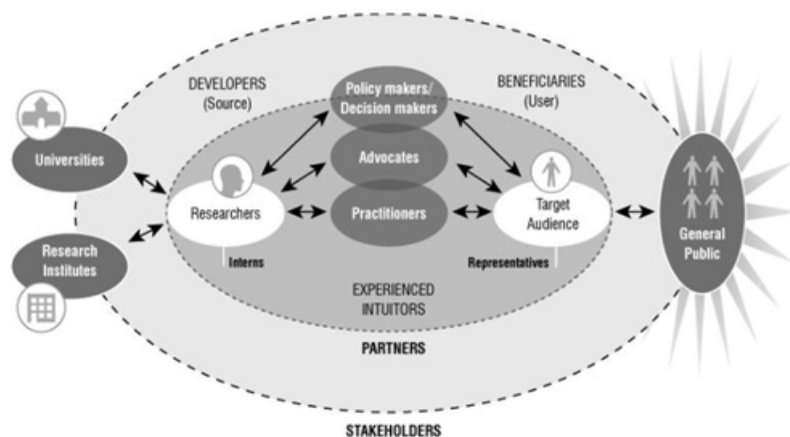


Figure 1: Potential players (Bennet & Bennet, 2007; used with permission)

Knowledge Mobilization Assessment Tools: The KMb assessment tools model (Figure 2) differs from most other models by giving equal attention to the three context/functions that are part of KMb. It also sees research use more as a function of systems and processes than of individuals. Approaches to understanding research use are often described in terms of a science push model (research producers try to circulate the results more effectively), a demand pull model (consumers look for research that may be useful), a dissemination model (research is selected because of the wide presence of different formats), and an interaction model (research is used due to chaotic collaboration between groups; thus, both groups influence the use, or lack of use, of research result) (Levin & Copper, 2012).

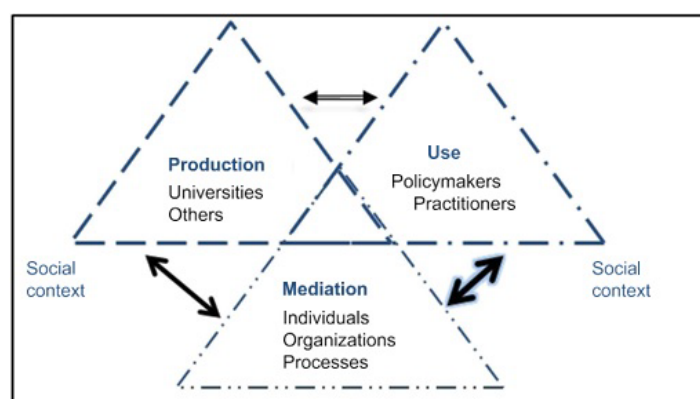


Figure 2: Knowledge Mobilization Assessment (Levin, 2012)

Knowledge Impact Model: Levin's (2004) KMB model is still regarded as sensibly pragmatic as it is still being has utilized or referred to by a significant number of other researchers, including Nutley et al. (2009) and the European Commission. The knowledge impact model (Figure 3) shows the contexts of research production and use are overlapping, not separate. Similarly, the boxes in the diagram can also represent functions and processes, not necessarily structures. Arrows represent connections and relationships of varying strengths (as indicated by the two-way arrows of different thickness). KMB occurs when two or more of these contexts or functions interact as seen how people or organizations work in two or even all three of the contexts.

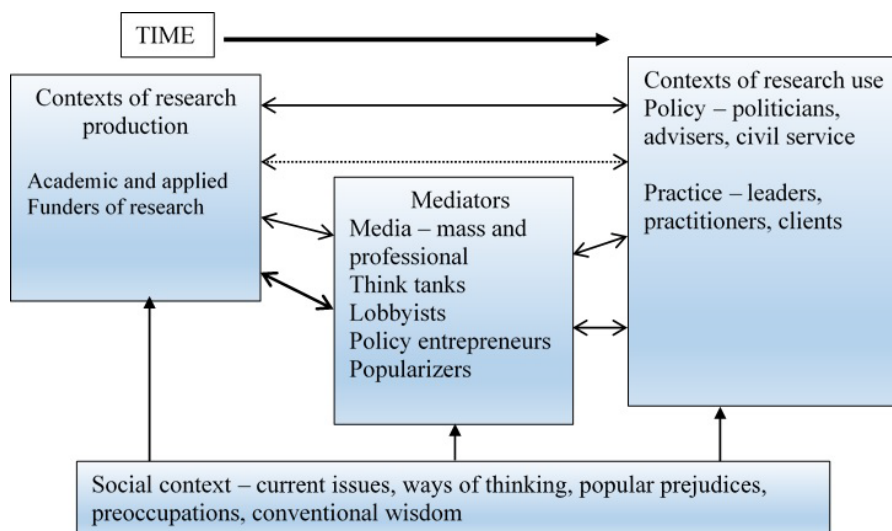


Figure 3: Model of Research Impact (Levin, 2004)

6. Knowledge Mobilization in Higher Education Institutions (HEIs)

Institutions of higher education, especially research universities, are particularly well equipped to facilitate the flow of new knowledge and to disseminate it internally. Exchanges of both faculty and advanced students need to be facilitated, along with participation in international conferences and research projects. Nations must also act to remove legal restrictions on the flow of scholars and ideas, and ensure that there is adequate funding for this important work. Publicly funded knowledge exchange also offers an international public good. Profit based research is designed to capture and commercialize the benefits it generates, not to make them universally and freely available. In large measure, academic research stands outside these commercial transactions. Internationally, higher education is an intellectual common represented by the invisible college (Task Force on Higher Education and Society, 2000 as cited in Altbach, 2013).

The academic investigations HEIs conduct and the new knowledge they produce offer high value to the name of the institution or country they represent. Thus, emerging knowledge-based societies encourage countries not only to create new knowledge but also to participate in academic and scientific collaboration with other nations (Master Business and Competitive Strategies Competitive, 2018).

Measuring Knowledge Mobilization in Higher Education Institutions: In implementing research results in the social sciences discipline, research findings can be validated using assessment measures. Consequently, the outcome of the implementation may be significantly affected by the design, process, and application of assessment measures. This shows assessment is more effective than evaluation since evaluation involves forming an opinion or perception and making decisions, while assessment “is the process of defining, selecting, designing, collecting, analyzing, interpreting, and using information to increase students' learning and development” (Westminster College, n.d.).

Theoretical Framework for Research: Developing a conceptual framework inspired by the KMB Generic Model (Bennet & Bennet, 2007) with modifications (used with permission) is a starting point for developing a KMB conceptual model for this study specifically focused on KMB in HEIs. The conceptual framework developed following interviews with university research experts was used as a guide in designing an analytical framework for measuring the effectiveness of KMB in HEIs.

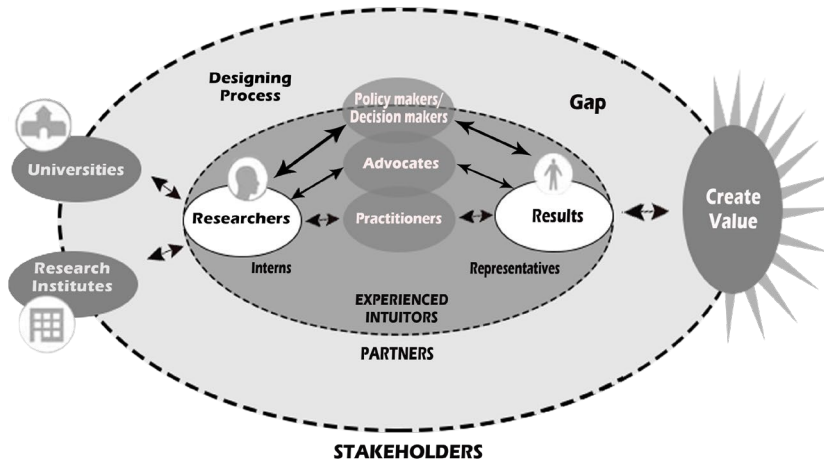


Figure 4: Conceptual framework (Adapted from Bennet and Bennet, 2007, Used with permission.)

The current state of KMb in HEIs was examined in designing the analytical framework. The policy impact of KMb is essential to improve KMb in HEIs, obtain research funding, and ensure that industry and partner stakeholders benefit from the research implementation (Levin, 2008). Research output should be disseminated to the consumers to convert it into something useful, thereby creating business value from the research, and published so knowledge circulates in the international arena and benefits other researchers. The generic KMb conceptual framework was explored in the areas of potential players, knowledge production, research output, and research utilization.

7. Methodology

This study describes the philosophical worldviews that inform the research design and data collection and analyze strategies used to attain the objectives set for the investigation. The analytical framework design for assessing KMb in HEIs is anchored on the social constructivism worldview which holds that individuals seek to understand the world where they live and work (Creswell, 2014). This explains how individuals create knowledge based on their cultural backgrounds, experiences, social interactions, and the complexity of nature. Furthermore, individual knowledge creation takes place as these individuals interact in the ecosystem of which they are a part.

8. Research Design

Following the social constructivism worldview, this research identified the current patterns and the potential of HEIs in mobilizing research to achieve effective and sustainable change in society. Although HEIs are mandated to nurture new knowledge through research and development to solve specific issues and address the concerns of the community (CHED, 2016), there is no significant tool to assess if the research results of Philippine HEIs are locally responsive and globally competitive. Thus, this study is of value in providing an assessment measure using an analytical framework.

Initially, the literature review was expanded to include a mini knowledge audit to acknowledge the substantial body of research produced by universities. The fields of knowledge of these researches were identified to understand their potential users or target audience, i.e., to help define the larger stakeholder community. The exploratory sequential mixed methods design was used to collect and analyze qualitative data. Core university stakeholders involved in the KMb process were asked open-ended questions based on the research focus, literature review, and mini knowledge audit. The qualitative data was subjected to content analysis to design a conceptual model for the KMb analytical framework. Its results guided the researcher in designing the initial KMb analytical framework.

Participants: The participants of this study were composed of 17 core university researchers from the selected HEIs involved in the KMb process. They were research directors of their respective HEIs or project research leaders whose researches were either completed or nearly completed.

Data Collection Procedure, Supporting Instruments and Data Analysis:

Building on the literature review, the researcher observed the following steps in the pre-data collection phase:

- Conduct a mini knowledge audit in the HEIs to (1) understand the knowledge domains the researches generated (2) identify potential end users of the research, i.e., the larger stakeholder group (3) identify current uses of this research, if available, and (4) explore current KMb processes related to specific identified research.
- Construct open-ended questions for the interview based on the research focus, and literature review to generate information on the HEIs' perception, knowledge, and practices on the use of research studies.

The actual data collection phase included an interview process to capture the respondents' views (qualitative in nature).

Design of a Conceptual Model of KMb. A conceptual model describes the connections among the variables. It simplifies the theorized connections between the concepts in the model, helps the readers visualize the concepts easily, and provides a quick idea of the problems that need solutions (Sekaran & Bougie, 2016). The model illustrates the main participants, the components of KMb, the relationships of the variables, and ideas explored and analyzed in the study. It shows that the independent variables, namely research production, research outputs, and research utilization influence the dependent variable, which is knowledge mobilization.

External KMb Model. As shown in Figure 5 below, External KMb makes knowledge produced by HEIs useful and impactful on the community through the dissemination of research outputs to various groups of stakeholders, the availability of external research funding to make the implementation of the research run smoothly, and the stakeholders' utilization of these research outputs for better external services to meet the needs of the targets users. Knowledge mobilization is, after all, basically about making knowledge ready for service or action

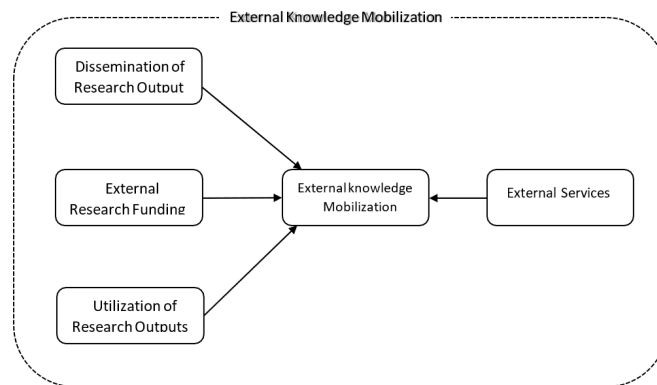


Figure 5: External Knowledge Mobilization

Internal KMb Model. As illustrated in Figure 6, for internal KMb initiatives of HEIs to be effective, there is a need to develop and nurture a culture of research among their faculty, provide adequate internal funding and resources, make the research results easily accessible by disseminating and communicating research results especially to stakeholders who can use them or can apply the research results generated, and monitor regularly the implementation of the project while upholding research integrity throughout the whole process.

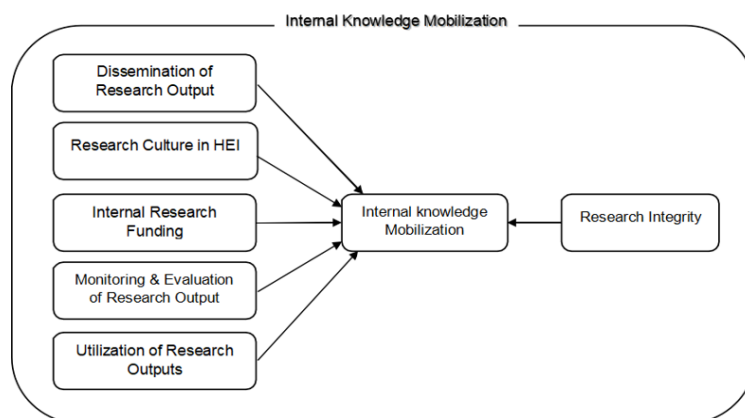


Figure 6: Internal Knowledge Mobilization

9. Discussion

How can the effectiveness of Knowledge Mobilization (KMb) of research results in Higher Education Institutions (HEIs) be assessed? HEIs do not have a uniform and standardized measuring instrument to measure the effectiveness of their research outputs. However, they have their own measuring instrument approved by their Research Center - survey questionnaires prepared by the proponents themselves based on guidelines by the Board of Regents and validated by experts; Customer Satisfaction Survey questionnaire where clients evaluate the HEI's products and services; a report on the number and the frequency of research outputs utilized by DepEd or by the division; an Impact Assessment conducted on the community by its Extension Management Office; Monitoring and Evaluation Forms to keep track of the progress of the research; a publication per million grant for CHED projects and an output-based instrument or 6 Ps (Publication, People Service, Production, Popularization, Partnership, and Policies) for other agencies like the National Research Council of the Philippines (NRCPP); feedback from beneficiaries of the project about the benefits they gained from the technology of the research; a visual inspection of the community after six months to find out if there is knowledge use; statistical treatment of data in questionnaire to determine the quality of the cutting, tensioning, the workability, economy, and safety of the machine for its internal stakeholders; a report on the number of research completed or published; Monthly Progress Report, Accomplishment Report, Financial Report, and presentation of the full-blown research; Administrative Order No. 25 with the Planning Director checking their targets and outputs; and a report by faculty members with research completed or published for Performance-Based Bonus (PBB) or Individual Performance Commitment and Review (IPCRF) purposes.

What is the current state of Knowledge Mobilization of research results in Philippine Higher Education Institutions (HEIs)? Philippine HEIs mobilize their research results to their stakeholders in formal reports annually to the Administrative and Academic Council, either in printed or digital format or through the conduct of events. The research results are published in CHED-accredited or international peer refereed journals and Compendium of Abstracts of Students and Faculty Researches and printed copies are distributed to other colleges, specific offices and officials, HEIs-fellow members of the consortia, and concerned government agencies through a courier service.

HEIs create a website for their research portal to upload research activities and digital copies of their research outputs. Dissemination of research results, university memoranda, and action researches is through their social media platforms and institutional email system, policy briefs, research gateways, Online Commons, and academic blogs. They also create an online database for subscribers of other online databases linked together to view it.

Furthermore, HEIs conduct annual face-to-face research colloquia and local and international research conferences, hold institutional webinars and extension services, invite external stakeholders to a presentation of the university's research outputs to discuss appropriate outputs for their use.

How can the mobilization of research results in Higher Education Institutions (HEIs) be measured? To ensure the efficiency and effectiveness of the KMb of research results generated by HEIs in the NCR, an institutionalized, unified, and standardized framework for measuring KMb would help guide the HEIs in incorporating a common set of performance scorecards to monitor, evaluate, and report KMb systematically, effectively, and accurately. The measurement should be in terms of the commercial value of the project, like if it earned the community profits, or if there is commercialization of the Utility Models (UM), Industrial Designs (IDs), and patents developed.

Moreover, the research results should get translated into extension activities that have a positive impact on the community like using the technology to improve businesses' products, services, and operations or create new products and technologies that enhance people's lives, provide livelihood programs so the community can produce their products, start small businesses, and commercialize research outputs to avoid wastage. Further, it should also satisfy the requirements for accreditation and the needs of the clients or agency who commissioned the research. It should be based on knowledge gaps, research gaps, and the needs of the stakeholders.

To sum up, the research results generated by the HEIs should be measured in terms of their usefulness or value to their stakeholders, how they benefit society and improve people's lives, from developing new products and technologies to informing policy-making and advancing scientific knowledge.

10. Conclusion

Effective external KMb promotes and strengthens social progress, innovation, and productivity. This includes working collaboratively with the community whose dynamic participation can efficiently synthesize the different sources of knowledge made accessible to them. For external KMb to be effective, a positive institutional culture that supports cooperation, candor, and learning has to be developed and sustained. Institutions have to put in place a mechanism that will integrate in their operations and strategies a system of recognizing and acquiring external knowledge. This can be done by collaborating with industries and forming consortia with other HEIs and professional organizations. Modern technology such as digital platforms, online communities, and social media make it easier for individuals and institutions to connect, share, and access external knowledge and to accelerate external KMb. Governments can create research-based policies, focus on complex societal issues, and promote economic development by mobilizing external knowledge. Clearly, today's knowledge-based economy relies essentially on external KMb as an important factor of innovation, productivity, and progress.

Similarly, the critical role of internal KMb cannot be downplayed in driving innovation within institutions and organizations. It enables institutions to look into new options, create new solutions, and stay in the lead of the competition by locating, identifying, and communicating relevant knowledge. Further, consolidating varied knowledge sources and viewpoints can lead to the creation of innovative ideas and out of the box approaches to problem-solving. Likewise, internal KMb equips policy makers and decision-makers with up-to-date information. Additionally, organizations can make conscious decisions, reduce the likelihood of problems, and maximize potential developments by taking advantage of internal knowledge. The efficiency and competence of an organization are strengthened as well. A successful Internal KMb needs a fully supportive institutional environment, an efficient system of handling information and resources, and strong stewardship. Institutions and organizations must promote a culture that holds in high regard information sharing, team work, and continuous improvement. They also need to inculcate a strong sense of information management systems that facilitate identifying, securing, storing, retrieving, and disseminating knowledge. In short, Internal KMb enables institutions and organizations to unleash the full potential of their internal accumulated intellectual resources to direct innovation, strengthen decision-making, and enhance overall effectiveness.

Practical Implications: External and internal KMb affect the performance and competitive advantage of an institution or organization, eventually translating research efforts to impact on society.

- Improve research collaboration: External KMb involves forming partnerships with stakeholders such as industry, government agencies, and community that will enable HEIs to gain opportunities in the form of expertise and funding. This can lead to increase productivity and efficiency, and enhance the quality of their research and impact on society.
- Accelerate innovation and technology transfer: External KMb can simplify and speed up the transfer of knowledge, technologies, and innovations from HEIs to their external partners. This can lead to the creation of new products, services, or processes, promote entrepreneurship, and encourage the establishment of new business ventures, thereby contributing to the economic development of the community.
- Enhance curriculum development: Since external KMb involves active engagement with external stakeholders, HEIs get the opportunity to gain a better understanding of growing trends, demands, and challenges in the industry and society. Such knowledge is helpful and relevant in updating and revising existing curricula, introducing new programs, and ensuring that their graduates have the knowledge and skills required for industry employment and social interaction.
- Promote stronger ties with communities: External and internal KMb enable HEIs to forge a strong working alliance with local community groups, local government agencies, industry partners, and non-profit organizations. This strong connection allows HEIs to help improve various aspects of local communities such as help groups of people within the community achieve their full potential. Among the engagement activities they can work together are collaborative research projects, community-level based education plans, and information sharing initiatives that benefit both the institution and the community.
- Boost the influence and honor of the institution: External and internal KMb provide high value to the name of the institution. Thus, by actively collaborating with stakeholders, institutions show the significance, impact, and contribution of their work to the community and society. This can attract

brilliant faculty and students, open doors for funding opportunities, and improve the institution's national and international rankings.

11. Limitations

In this study, the HEIs selected were those located in the National Capital Region, the most urbanized region in the country, where research outputs are expected to be mobilized to improve the economy and the quality of life of the community.

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