Evaluating University–Community Engagement Through a Community-Based Lens: What Indicators Are Suitable?

Irungu Ruth Wanjiru and Liu Xiaoguang

Abstract

This study explores the indicators of university-community engagement and their implications to evaluation. Through an examination of 47 studies, we validate that university-community engagement can unfold in many ways and impact many stakeholders, and that, evaluation focusing only on university perspectives might leave out the community perspective which is equally important. We developed a conceptual framework consisting of three domains of university-community engagement, namely purpose, process and community impacts. These domains offer a comprehensive evaluation of university-community engagement from a community perspective. We then identify the key performance indicators under these domains and the implications of these indicators to evaluation. We found out some existing limitations on methodology and on quantifying indicators. Based on the findings, we recommend that the selection of indicators should consider a variety of activities and impacts to allow comprehensive evaluation. Also, methodologies should be continually refined to keep up with changing phenomena.

Keywords: university-community engagement, indicators, evaluation, measurement

During the last few decades, world economies have changed to knowledge economies, whereby the economy in developed countries has become driven by technologies based on knowledge creation (Powell & Snellman, 2004). In this paradigm, innovation and knowledge production is vital, and universities are seen as an undeniable source of new ideas and talents (Aksoy & Beaudry, 2021). Therefore, universities are no longer ivory towers, producing knowledge in isolation, but are expected to engage with their communities in order to promote regional and national growth (Etzkowitz & Leydesdorff, 2000; Rossi & Rosli, 2015). Universities' traditional roles, teaching and research, are increasingly being supplemented by community engagement (Murphy & Dyrenfurth, 2019; Theeranattapong et al., 2021). As a result, university-community engagement has continued to evolve as a dynamic field of scholarship and practice that now carries ever-increasing academic respect (Sandmann & Jones, 2019). There is also growing concern regarding the purpose of universities in their communities (Schlegel et al., 2021), how this relates to their desired outcomes, and how those outcomes should be evaluated (van der Zanden et al., 2018). This concern with university purpose and outcomes has in turn necessitated a clear and consistent understanding of community engagement and community-based evaluation.

Community engagement has been defined by various higher education institutions, community and professional associations, and educational organizations. Common themes in these definitions include enhancing collaborations among universi-

ties and communities, and impacts such as improved quality of life, social development, and economic growth (Olson & Brennan, 2017). Among the many existing definitions within the field of higher education, we focus on the Carnegie Foundation definition, which has become increasingly popular. The Carnegie Foundation defines university–community engagement as the collaboration between universities and their broader communities for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity (Gruber, 2017). University–community engagement entails the interaction and cooperation between universities and their communities to not only promote science and technology transfer but also its application, social development, and improvement of community members' welfare. In this regard, communities can be local, regional, national, or international, and these partnerships address these communities' concerns and enhance teaching, research, and knowledge transfer for economic development (Gruber, 2017).

According to Charles et al. (2010), both governments and policymakers have exhibited growing interest in university–community engagement. University–community engagement is a fundamental aspect in promoting knowledge creation and transfer for socioeconomic development. Governments therefore have invested in university–community engagement and desire to determine the impact of such venture and investment, resulting in a need to evaluate university–community engagement. The increased level of engagement activity leads both universities and their partners to seek improvement and to look for ways and tools to benchmark themselves against other universities and other community engagement systems.

Community engagement has received widespread attention. In the United Kingdom, for example, the National Coordinating Center for Public Engagement (NCCPE) as part of the Beacons of Public Engagement has created a self-assessment tool to help universities assess their progress in community engagement (Hanover Research, 2014). The Research Councils U.K. (RCUK) also provides a useful evaluation framework for university–community engagement in three steps: formative evaluation, process evaluation, and impact evaluation. In the United States, the Carnegie Community Engagement Classification, drawing its criteria from indicators of engagement, offers a tool for evaluation and to help reaffirm institutional commitment to community engagement. In Canada, the Community Engaged Scholarship Institute and the Research Shop have explored the evaluation mechanisms found within the literature that are used to assess community-based participatory research projects (Nash, 2015). A majority of these evaluation approaches suggest the use of indicators and also provide a three-step evaluation process consisting of purpose, process, and impacts.

The choice of indicators for these evaluation activities carries vital implications for universities, community stakeholders, and other policymakers. According to Rossi and Rosli (2015), indicators are performative, as they establish what engagement activities policymakers and funding agencies consider important. Choice of indicators in turn determines what kind of performance may be associated with rewards. It is therefore important to carefully choose evaluation indicators, which will allow fair and accurate representation of engagement activities.

However, despite this widespread attention toward university–community engagement, evaluating it from a community perspective presents problems (Hart & Northmore, 2011). There is a paucity of theoretical investigations into what indicators are most appropriate to evaluate university–community engagement (Rossi & Rosli, 2015). To help stakeholders and policymakers evaluate university–community engagement, a clear understanding of the domains of university–community engagement and the indicators that characterize them is important.

The main aim of this article is to discuss previous evaluation approaches, identify the indicators used and their implications for evaluation, and propose some directions for improvement. Accordingly, I present the first two research questions of this literature review: Which are the key performance indicators of university–community engagement? What are the implications of these indicators to evaluation? To answer these questions, I identify previous approaches in evaluation and their limitations. Under the guidance of previous approaches, I offer a conceptual framework consisting of three domains of university–community engagement: purpose, process, and community impacts. I then identify the key performance indicators under these domains

and the implications of these indicators for evaluation. Finally, I identify some gaps for future research orientations and derive some implications for policy.

The results of this study are expected to provide more insight into further theoretical research on evaluating university–community engagement. The study will promote public understanding and support for university–community engagement practices. It also can act as a reference to policymakers for the purpose of refining the existing frameworks.

Method

This research uses the narrative literature review method, which was chosen to synthesize the findings and implications of included studies due to the predominantly descriptive nature of university–community engagement activities (Lundberg et al., 2020). Narrative reviews have been found useful in offering breadth of literature coverage and flexibility to deal with evolving knowledge and concepts, as well as describing the current state–of–art of a particular topic (Ferrari, 2015). However, they have been criticized for a lack of acknowledged guidelines and for often failing to disclose study inclusion criteria (J. A. Byrne, 2016). To deal with these limitations, Ferrari (2015) has proposed borrowing from the systematic review methodologies, which benefit from guidelines such as PRISMA (Preferred Reporting Items for Systematic Reviews and Meta–Analyses). We adopt this proposition in our research, and have outlined the conduct of exclusion and inclusion of this study. This approach is expected to reduce bias in the selection of articles for review and therefore improve the quality of the narrative review.

Search Strategy

The literature scan was conducted through three databases: Google Scholar, which, in addition to journal articles, also contains doctoral dissertations and research reports, both of which are advantageous (Ruitenburg & Tigchelaar, 2021) because the number of publications on evaluating university–community engagement is known to be small (Northmore & Hart, 2011; Rowe & Frewer, 2000); the Web of Science, one of the largest scientific databases for social research; and the Educational Resource Information Center (ERIC), a domain–specific database that collects only educational research (Honingh et al., 2018). No time restrictions were placed; the results thus included all studies from these databases until July 2019. Three search terms were used: "university purpose towards community engagement," "process of university-community engagement," and "community impacts of university-community engagement." This resulted in 47 studies.

Inclusion and Exclusion Criteria

The search results using the various terms as well as the progressive filtering of abstracts using various inclusion and exclusion criteria are shown in Figure 1. To select the appropriate studies, a number of inclusion and exclusion criteria were used. Studies were included if (a) they contained a measure of evaluating university–community engagement, the process of university–community engagement, and community impacts of university–community engagement; (b) the participants were university staff, students, and community members; (c) the study described quantitative, qualitative, or mixed–methods research; and (d) the study was published in English. Articles were excluded if they (a) were published in other languages or (b) reported engagement activities between communities and other nonuniversity institutions.

In addition to studies presented in peer–reviewed journals, which made up the majority of the included studies, studies published in other formats, such as reports and books, both qualitative and quantitative, were also included provided that they met the inclusion criteria. This sort of allowance enables the compiling and mapping of theoretical perspectives and empirical focuses, and it results in earlier research rather than attempting to evaluate the quality of research (Kirsten, 2020).

Although the use of these different strategies helped ensure that the results included many potentially eligible studies on the topic of university–community engagement, the study is not without limitations. The search may have missed studies on university–community engagement that used different terminology.

Results

This section presents previous evaluation approaches in university–community en-

Search

Search features

· Searching electronic databases: Google scholar; ERIC; Web of Science
· Scanning reference lists in reviews on university–community engagement

421
Studies examined

Inclusion criteria

Criteria for study inclusion

· Must include a measure of evaluating university–community engagement
· Participants of the study must be university staff, students, or community partners
· Must describe qualitative, quantitative, or mixed method research
· Must be published in English

Eligibility

423
Abstracts screened

328
Abstracts excluded

95
Full text articles evaluated for eligibility

50
Full-text articles evaluated for eligibility but excluded

· Duplicate results
· Reported engagement activities between communities and other non-universities institutions

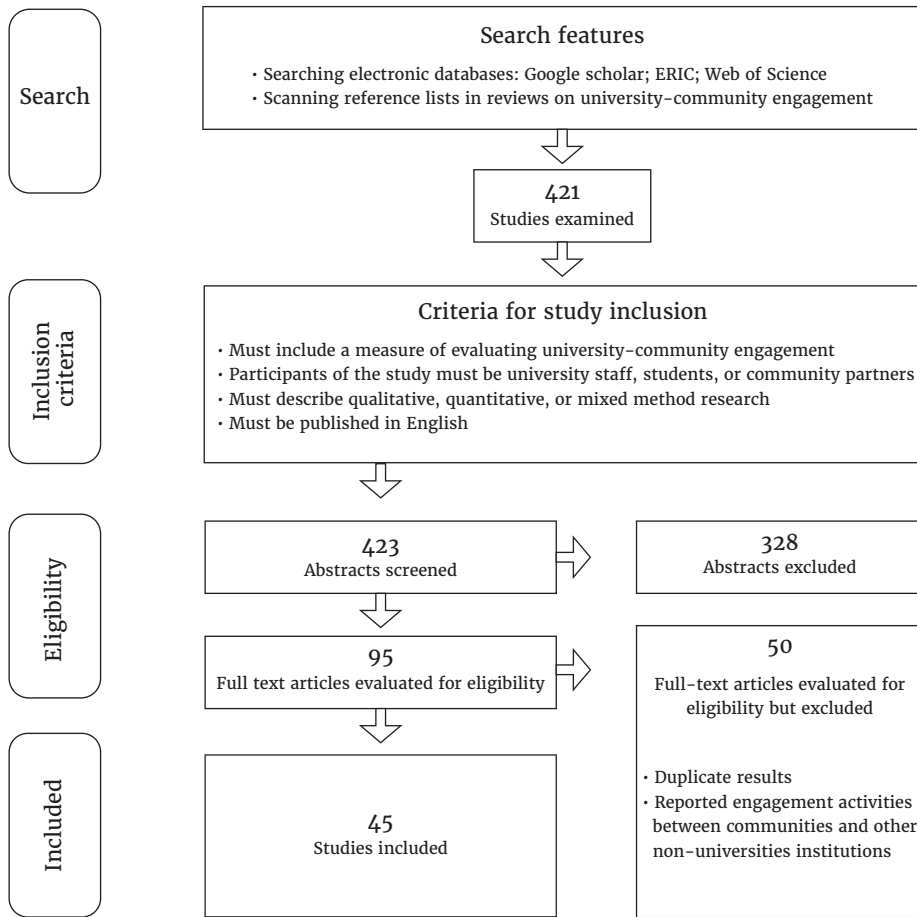**Included**

45
Studies included

Figure 1. Selection of Studies for Review

gagement. In this section, I also develop a conceptual framework comprising three domains of university–community engagement.

Previous Approaches in Evaluating University–Community Engagement

Garlick and Langworthy (2008) examined evaluation approaches around the world and came up with three broad types of evaluation that universities have applied to university–community engagement: (1) guided self–evaluation with expert peer review and iterative agreement, (2) a metric evaluation based on an agreed schedule of measures, and (3) a combination of both. Garlick and Langworthy found that in most cases, the focus is on the process rather than the outcomes of engagement. The lack of focus on outcomes could result from the necessarily longitudinal and diverse nature of many of these outcomes, which extend beyond standard economic and social benefits. A more recent study (Plummer et al., 2021), although focusing on both the process and the outcomes of higher education institution (HEI) community engagement, fails to include a community perspective in the evaluation process. The questionnaires seeking to establish the state of HEI–community partnerships were distributed to only the HEIs and not the community partners. This phenomenon is echoed by a study that proposes a new conceptual framework for evaluating university–community engagement focused on technology transfer and innovation, continuing education, and social engagement (Secundo et al., 2017). Although the study evaluated social engagement, the indicators proposed are based on the university's perspective, including the

number of socially active university alumni and number of events open to the community. The omission of the community's perspective could reflect the diverse nature of community partners as well as contextual considerations, making it difficult to compare across borders and institutions.

In Canada, the Community Engaged Scholarship Institute and the Research Shop have explored the evaluation mechanisms found within the literature that are used to assess community–based participatory research projects (Nash, 2015). In their evaluation process they came up with a framework consisting of three key stages of evaluation: start–point evaluation, process evaluation, and output/outcome evaluation. In start–point evaluation the focus is on indicators such as organization capacity. In process evaluation the focus is on conduction of the project. In output/outcome evaluation the focus is on outreach and impacts. Unlike other evaluation tools that focus only on the process and outcome of engagement, Nash's framework integrates a start–point evaluation focusing on organization capacity. Evaluating the organization capacity is useful in providing further insight into the scope and intensity of planning accorded to the project at the beginning, which consequently determines how the rest of the project ensues.

In the United States, there is wide use of the Carnegie Engagement Elective Classification, a voluntary comparative scheme for universities involved in community engagement work (K. Smith et al., 2014). This tool is considered strong on using indicators to assess institutional effectiveness and measure the impact of community engagement initiatives on students, academic staff, the institution, and the community. However, it remains a system structured uniquely for American universities to compare their engagement activities and levels of performance using a set of indicators, a factor that makes the system inaccessible to a broader international audience (Hart & Northmore, 2011).

Another variation is the Outreach and Engagement Measurement Instrument (OEMI), which was developed by Michigan State University (MSU; Fitzgerald et al., 2010). This instrument collects data annually and classifies it based on faculty effort (time spent, issue tackled, university strategic imperatives, forms of engagement, location of proposed impact, funding) and data of specific projects (purposes, methods, involvement of partners, involvement of students, impacts, creation of intellectual property, and duration). The OEMI has been praised by Hanover Research (2014) as one of the most significant contributions that MSU has made in an effort to effectively measure and benchmark engagement. Its online survey provides rich data that describes engagement activities to the community.

In the United Kingdom, Bradford University has established a qualitative tool based on four principles—reciprocity, externalities, access, and partnerships (REAP)—to evaluate community engagement (Pearce et al., 2008). The tool is used to provide a framework for measuring achievement in engagement as well as allowing greater involvement by engagement partners who are encouraged to become part of the assessment process (K. Smith et al., 2014). Unlike previous frameworks, the REAP approach allows involvement of engagement partners in the assessment process. When community partners participate, they may not only feel a greater a sense of inclusion, but also provide more insight into the assessment process as well as areas that need improvement. Although the REAP approach is considered highly useful, it faces limitations, including the difficulty of collecting baseline data and indicators, and a failure to measure economic impact (Northmore & Hart, 2011).

In the United Kingdom, the Higher Education Business and Community Interaction Survey, undertaken by the Higher Education Funding Council for England, has been developed. This annual survey is aimed at capturing the intensity and characteristics of the exchange of knowledge between higher education institutions and the community (Rossi & Rosli, 2015). It makes full use of standardized indicators such as patent licenses that have been well developed over time and are reasonably comparable internationally, and also includes a wider set of new quantitative indicators as well as some qualitative questions. Although this tool is effective and information collected through this survey is used to support evidence–based policymaking, initial work on the very first survey found that many universities struggled to complete different questions due to the limitations of their databases (Charles et al., 2010). It is also reported that only a few

universities use this model with appreciable intensity and success, as it is suitable to a limited number of scientific fields (Rossi & Rosli, 2015). Unlike the previous approaches that have been criticized for their inapplicability to international comparisons, the Higher Education Business and Community Interaction Survey uses standardized indicators and can be used for benchmarking internationally.

Another tool in the United Kingdom, developed by the National Coordinating Centre for Public Engagement (NCCPE), provides an accessible guide that can assist academics, university administrators, and community partners interested in monitoring and evaluating university–community engagement (Northmore & Hart, 2011). The NCCPE approach suggests evaluation with nine indicators across three distinct categories of engagement: purpose, processes, and people (Hanover Research, 2014). Although this approach integrates evaluation of impacts among the people in the community, much of its focus is on the university, and its attempt to evaluate university–community engagement is from a perspective rooted in higher education. The RCUK also provides a useful evaluation framework for university–community engagement consisting of three steps: formative evaluation, process evaluation, and impact evaluation. This approach, similar to the majority of the previous ones, advocates evaluation throughout the process of planning, delivering, and assessing the outcomes of community engagement projects. Evaluating the three processes of engagement could provide more holistic results, as all three steps affect each other and it is thus important for evaluation tools to capture each step.

Domains of University–Community Engagement

Community-based evaluation pays attention to the critical commitment of engagement work: inclusion, mutually beneficial outcomes, and engaging community as competent colleagues in the creation of knowledge (Weiss & Norris, 2019). According to Creighton (2006), determining what constitutes effective community engagement from a community perspective is a crucial step toward building strong relationships between universities and their community partners. In this article, we take "community-based lens" as a representation of the community members. A member of the community looking at a university's commitment to its community would look for several aspects: university purpose, university–community engagement process, and community impacts.

Under the guidance of previous approaches (Hanover Research, 2014; Nash, 2015; Stanton, 2012), we come up with a conceptual framework consisting of three domains of university–community engagement: purpose, process, and community impacts. From a community perspective, university identity (purpose) in regard to community engagement, delivery of engagement activities (process), and the resulting community impacts are significant in conducting a comprehensive evaluation.

Purpose

With regard to community engagement, the term "purpose" has been defined in several ways. Purpose refers to university identity and culture, which, according to J. V. Byrne (2019), is the integrated pattern of university structures and approaches to knowledge creation and the balance of teaching, scholarship, and service. This may determine the extent to which community engagement is ingrained in the vision and mission of the university, which in turn affects how the university brings engagement to the view of its stakeholders, including the public. In their description of university purpose, Sandmann et al. (2009) observed that in the 21st century, universities have progressively turned to community engagement as a natural progression of their traditional missions. With these missions, universities are distinctively positioned to address community issues; engage in service to the local community; and involve students, faculty, and administrators in this shared purpose. According to Szilagyi et al. (2014), purpose in regard to university–community engagement includes administrative and leadership arrangements, organized committees, facilities provided, and financial and nonfinancial support. The NCCPE regards purpose in terms of aspects such as the mission of the university toward community engagement, leadership strategies, and communication (Hanover Research, 2014), as shown in Table 1. Purpose in an engaged university, accordng to Stanton (2012), is the university's intentional public purpose beyond developing new knowledge for its own sake. It is an understanding of not just what it is good at, but what it is good for

Table 1. Possible Indicators of University Purpose Regarding Community Engagement		
Domain	Dimension	Questions/Indicators
Purpose	Mission	Whether the university has generated a shared understanding of the purpose, value, and meaning of engagement and embedded this in the university strategy and mission.
	Leadership	Whether the university supports champions across the organization who embrace engagement.
	Communication	Whether the university communicates consistent, precise messages to confirm, promote, and celebrate it, and warrant open and collaborative communication with internal and external stakeholders.

Note. Adapted from the National Coordinating Center for Public Engagement (NCCPE) Edge tool. (Hanover Research, 2014)

(Goddard et al., 2016).

University mission is an indicator of whether a university is purposeful toward incorporating community engagement in its core functions and also, according to Hollander et al. (2002), whether the university explicitly articulates commitment to the public purposes of higher education. Vidal et al. (2002) ascertained university mission as an essential institutional aspect toward the support of community engagement. Some of the university mission indicators in regard to community engagement also mention community engagement and outreach as a part of what the university does (Holland, 1997). Mugabi (2015) pointed out that universities that recognize community engagement as their core function have integrated aspects of community engagement into their curricular activities and policies. Such universities' mission statements reference contribution to the socioeconomic transformation of their communities.

Leadership has also been suggested as a key determinant of university–community engagement. According to Hollander et al. (2002), leadership plays an important role in bringing university–community engagement from the margins to the mainstream. University leadership, according to Liang and Sandmann (2015), is multilayered, involving formal (chancellors, presidents, provosts, deans) and informal leaders (staff, students, and community members involved in various engagement initiatives). Some indicators of university purpose are shown by how the formal, informal, and administrative leadership support university–com-

munity engagement (Liang & Sandmann, 2015). For example, they may foster promotion and tenure systems that recognize, document, and reward the scholarship of engagement (Hollander et al., 2002).

Communication has also been demonstrated to be crucial in university–community engagement. University communication regarding university purpose aims for awareness of university–community engagement work (Arrazattee et al., 2013). Indicators include factors such as whether the university communicates consistent, precise messages to celebrate and reinforce university–community engagement (Hollander et al., 2002). Many universities purposefully incorporate the language of community engagement into their missions and actively carry out service–oriented programming as part of university pedagogy (Rodwell & Klugh, 2014). Hanover Research (2014) supported the inclusion of language as a key indicator of university–community engagement. Universities have various modes of communication, including reports and school motto, as well as leaders who have the potential to propagate the culture of engagement in both the university and the community.

Process

Most researchers agree that process can be perceived as the type and extent of efforts to integrate community engagement into the activities of the university (Hanover Research, 2014; Stanton, 2012). Szilagyi et al. (2014) explained process as a description of activities undertaken regarding commu-

nity engagement. The Carnegie Foundation proposes that universities self-assess their programs through indicators of process, such as institutional commitment, partnerships, and outreach and curricular engagement (Hanover Research, 2014).

Process indicators are shown by university commitment to community engagement, through factors such as organizational strategies, policies, structures, and programs (Mugabi, 2015). The NCCPE pointed out factors such as institutional support, academic programs, and recognition of community engagement as measures and indicators of the degree to which institutions have meaningful and well-developed university–community engagement processes (Hanover Research, 2014). Other potential indicators of the process of community engagement include public access to facilities, faculty engagement, student engagement, and public access to knowledge (Northmore & Hart, 2011). Process-oriented evaluation is thus an important way of determining commitment in maintaining the process of university–community engagement over time.

According to Hart and Northmore (2011), the NCCPE has also come up with a seven-dimension description of the process of community engagement (Table 2) showing the indicators of engagement. Other indicators to consider when evaluating the process of university–community engagement include engaged research, teaching and learning (accredited community-engaged learning and research), student volunteering, public engagement and involvement, and institutional infrastructure and architecture (Irish Universities Association, 2018).

Community Impacts

Scholars have proposed that emphasis should be put on what the university does to address the needs of the region (Charles et al., 2010). Universities are thus increasing their efforts to demonstrate their social value more clearly (J. Smith et al., 2017). They do so by engaging their local communities to achieve positive impacts, including strengthened democratic values, educated and engaged citizens, and social and economic development. It is thus crucial for program stakeholders and funders to pose questions such as whether engagement is making a difference and, if so, how much (Khandker et al., 2009). Singh (2017) noted that although community impacts are often neglected in favor of other engagement domains, they provide a clear, concise means of addressing these questions, and it is critical for stakeholders to define, capture, and communicate their impacts. Stanton (2012) stated that evaluating community impacts helps establish whether engagement activities lead not only to advances in knowledge but also to improved life in the communities and the extent of such improvements. Furthermore, evaluating community impacts can yield insights into why a program may not deliver as intended, and provide a base for improvement.

The W. K. Kellogg Foundation, according to Erickson (2010), used quantitative measures to assess community impacts. Quantitative measures, which look at measurable, numerical relationships, may provide more precise and valuable results regarding the community impacts of university–community engagement. The foundation also considered the longevity of projects beyond the life of the grant and use of available grant funds to leverage additional support as indicators of community project success. On the other hand, the Carnegie Foundation requires that U.S. institutions demonstrate the impact of university–community engagement to achieve the elective community engagement classification (Hanover Research, 2014). This requirement may promote the culture of measuring community impacts among the institutions, which, in turn, may provide insight on areas necessitating improvements and lead to better engagement practices.

As proposed by Leuci and Blewett (2008), Table 3 shows potential community impact indicators, which are grouped into short-term results, medium-term results, and long-term results. This approach is useful in evaluating impacts that occur in longitudinal and extended periods of time.

Discussion

Previous Approaches

Existing literature shows that there are no clear practices in effectively measuring university–community engagement, and the development of effective evaluation approaches and tools is currently in a formative stage (Hanover Research, 2014). Some of the previous approaches in this study have been identified in the section Previous Approaches in Evaluating

Table 2. Seven Dimensions of the Community Engagement Process, Showing Various Indicators		
Domain	Dimension	Indicators
Process	Public access to university resources	• Shared physical facilities such as museums, libraries, and archives • Public access to sports facilities
	Community participants' involvement	• Including practitioners as teachers • Inviting community members to coteach courses both in the classrooms and in the field
	Public access to university knowledge	• Public intellectual activities such as contribution to public debate and advisory boards • Access to university curricula • Publicly accessible database of university skill • Public engagement in research
	Student involvement	• Student involvement in volunteering activities • Number of campus tours • Number of school visits and talks • Experiential learning • Curricular engagement • Student-led innovations that have a social impact
	Faculty engagement	• Research clusters focusing on community needs • Current and previous engaged research • Volunteering outside working hours • Staff with community engagement as a specific part of their job • Promotion strategies that reward community engagement • Showcasing engaged research activities • Public lectures
	Promoting economic rejuvenation and enterprise in community engagement	• Research partnerships and technology transfer • Meeting regional skills needs • Strategies to increase innovation • Business advisory services offering support for community–university collaborations • Awards for entrepreneurial projects
Process	Institutional relationship and collaboration strengthening	• University office for community engagement • Joint community-based research programs responsive to community–identified needs • University–community collaborations for learning and dissemination of knowledge • Community members included in the university's governing body. • Website with community pages and activities • Conferences on public concerns and with public access • Corporate social responsibility

Note. Adapted from the NCCPE. (Hanover Research, 2014)

Table 3. Potential Community Impact Indicators			
Domain	**Indicators**		
	Short-term results: Learning	Medium-term results: Actions	Long-term results: Conditions
Community Impacts	• Expansion of knowledge and understanding of economic trends and conditions and community approaches for attaining their desired future • Perceptions and awareness among the stakeholders • Application and usage of output	• Expansion of resources and funds leveraged • Increased networks and collaborations • More informed decision making and leadership • Confidence of community project partners • Enlargement of projects	• Development, retention, and expansion of sustainable economic opportunities • Increased wealth and income • Reduced poverty

Note. Adapted from Leuci & Blewett, 2008.

University–Community Engagement. The results indicate that the approaches vary from country to country and even among institutions within the same country. This variation, which has not been explained, could result from the differences between the universities' priorities and tastes or could reflect the communities with which they engage.

Some of the approaches have been criticized for lack of some of the parameters essential for evaluation. Langworthy and Garlick (2008), for example, have reported that some approaches do not indicate the outcome of university–community engagement. Furthermore, some frameworks fail to involve the community partners in the evaluation process (Plummer et al., 2021; Secundo et al., 2017). It is also clear from the results that there are concerted efforts to improve on the existing approaches. Although Plummer et al. (2021) failed to include community partners in the evaluation process, in a second questionnaire aimed at examining how best to assess the performance of community engagement, they included community partners. Involvement of both university and community partners in evaluation processes is necessary, considering the importance of evaluation to the universities themselves, the community, and the policymakers.

Some evaluation approaches also seem inappropriate for benchmarking purposes, as they lack standard and comprehensive indicators. The Carnegie Foundation, for instance, includes indicators that are tailored specifically for American universities. The use of standard and comprehensive indicators would not only enable universities to benchmark and compare some common indicators, but also provide policymakers with information to allow them to use specific indicators for strategic management.

Additionally, the existing approaches differ in complexity, with some reported to be rather challenging to the universities (Charles et al., 2010). For example, the Higher Education Business and Community Interaction Survey is used exhaustively by only a few universities, as it is suitable only for a limited number of scientific fields. Community members may find similarly complex or specialized evaluation methodologies no easier to apply.

Challenges in Evaluation

The studies under review reveal that the majority of evaluation is directed toward other aspects of university–community engagement, neglecting to measure the impacts on the community. Rowe and Frewer (2000) had noted that in assess-

ing the efficiency of public involvement in science and technology policy, much of the argument in the literature focuses on what makes for a successful process, rather than how to measure effective outcomes and impacts. Northmore and Hart (2011) have reviewed available literature on university–community engagement and found that the largest numbers of measures are for assessing individual, group, or project characteristics, with impacts and outcome measures being the least numerous. In their review they found minimal tools for capturing the community perspective. Currently this area shows significant improvement. For example, there are publications on the various methods of evaluation, their implications and challenges. But in view of these challenges reported, there is need to continue sharing information in order to perfect university–community engagement and its evaluation. The available literature reveals challenges to evaluation in four areas: methodological limitations; limitations on quantifying performance indicators of university–community engagement; limitations on quantifying the variety of community impacts; and the causality problem.

Methodological Limitations

The studies under review reveal that although the various evaluation systems and tools capture a full range of engagement activities, not all of them are investigated with the same degree of detail, and some aspects are overlooked, including community impacts. Unlike teaching impact measurement, for which numerous established methods are continually refined, an evaluation into community impact is still in the initial stages (Bornmann, 2012). For example, there is the question of what measurements can be applied across a wide range of engagement activities. Many activities are undertaken in broad ways in the community and hence tend to be unmeasured or unreported. As a consequence, efforts of individuals and changes in the community may be significant but go unnoticed. Northmore and Hart (2011) noted a deficiency in the methodology of evaluation as well as the lack of a standardized measurement instrument for evaluating university–community engagement. The current methods, such as the Higher Education Business and Community Interaction Survey, have been found to require further refining (Rossi & Rosli, 2015), as the variety of engagement activities measured are extensive but not exhaustive.

Limitations on Quantifying Performance Indicators of University–Community Engagement

Rossi and Rosli (2015) have indicated that university–community engagement indicators are difficult to observe and quantify. There are no established practices for determining quality and quantity in outreach and engagement, as there are for teaching and research. As a result, many university policymakers are not aware of the extent and impact of community engagement that occurs even within their own institutional spheres (Olowu, 2012). Indicators are a means of measuring the codifiable and measurable, whereas much university–community engagement defies measurement and is highly heterogeneous (Charles et al., 2010). Engagement indicators vary widely across universities, projects, faculties, and departments (Hart & Northmore, 2011). This variation may reflect the diversity of approaches of university–community engagement, which is conducted through diverse frequencies, characteristics, and interactions. It is therefore difficult to determine the quantity or amount of effort that a university has put into community engagement.

Limitations on Quantifying the Variety of Community Impacts

Demonstrating impact at the level of community well-being and placing an economic value on engagement activities is even more problematic (Pearce et al., 2008). Certain aspects of the community, including quality of life, businesses' innovation capacities, and sustainable use may have improved in ways that cannot be measured in quantifiable or economic values. Furthermore, university–community engagement usually occurs through interactions rather than simple transactions (Rossi & Rosli, 2015). These interactions generate strong spillovers that benefit groups beyond those involved in the initial engagement and in ways extending beyond economic benefits to social benefits (Jongbloed, 2008). Therefore, unlike other areas such as teaching, where there are relatively precise, repeatable, and codifiable inputs (lectures, seminars, conferences) and outputs (graduates, degrees or modules examined), community engagement has highly disparate impacts, making its outcomes difficult to validate (Charles

et al., 2010). Impacts cannot therefore be adequately captured by simple indicators of the output of the university–community engagement process and its economic value.

Further, in university–community engagement, academics and nonacademics come together through loose, informal, and changing networks (Jongbloed, 2008) in activities such as flow of information and sharing of ideas. The extent of such activities is difficult to capture and quantify through indicators.

Causality Problem

Bornmann (2012) stated that as a result of the diversity and far-reaching effects of engagement activities, it is not certain which impact can be attributed to which cause or specific activity. This uncertainty results from the time lag between the effect produced and the engagement activities that are supposed to have generated it, as well as the problem of disentangling the extent to which the engagement results were the sole or most significant causes of the effect produced (Reale et al., 2017).

Further, impacts of university–community engagement on regional development are not linear, but are often based on iterative, organic, and self-reinforcing processes. Therefore, impacts may gradually generate other changes that may be difficult to accurately attribute to specific actions.

Implications of the Indicators of the Three Domains of Evaluation

Implications of Purpose Indicators

In the process of evaluating university–community engagement, purpose is an important aspect. This review has noted the Carnegie Community Engagement Classification as a fairly good framework for evaluation. The Carnegie Community Engagement Classification has identified purpose as one of the requirements a university should meet in order to be classified. Institutions are asked first to document a set of foundational indicators in the category "institutional identity and culture," where one requirement is that the institution indicate that community engagement is a priority in its mission and provide relevant quotations from mission statements to demonstrate that priority (Jongbloed, 2008).

During the previous classifications, universities that did not show a sense of purpose toward community engagement (through mission, leadership, and communication) were denied the prestigious classification. In the questionnaire used for university classification, if the institution answers a majority of questions in this category in the affirmative, it makes sense for the institution to complete the rest of the questionnaire.

The use of university mission, leadership, and communication as indicators of university–community engagement, however, has some limitations.

The Problem of Quantity. Indicators regarding university–community engagement can manifest in many ways, and not all can be captured quantitatively (Jongbloed, 2008). These indicators (mission, leadership, and communication) are only presented as qualitative or descriptive data. This is a problem for researchers who aim to conduct quantitative studies as well as benchmarking across borders.

Communication Problems and Misrepresentation. According to Arrazattee et al. (2013), university–community engagement professionals often wish to increase public awareness of their work; however, in many universities communication is overseen by a centralized marketing office. Such offices are often run by individuals who are unacquainted with the partnership principles of the engagement initiative. These strictures on promotional channels may therefore lead to misrepresentation, even when engagement activities may in fact be effective and productive.

Implications of Process Indicators

Jongbloed (2008) has reported that authors recommend a focus on indicators of the engagement process instead of a focus on the outcomes or impact of such activities. However, process indicators are not necessarily confined to the proximate region of the university, but are more widely spread (Crescenzi & Percoco, 2012). For example, according to Jongbloed (2008), advisory work of academics, paid as well as voluntary, and entrepreneurial activities are used as indicators. However, they may take place or bring about results that are further away from the parent university. Entrepreneurial activities, for instance, cover all actions carried out by universities to set up new firms to exploit existing university capabilities.

The indicators of such activities are easily quantifiable and have therefore been the object of substantial research. However, some activities may initially be located in the immediate region of a university, but, due to the mobility of graduates and researchers, many will have been created further away from the parent university.

The focus on a limited variety of engagement process indicators creates problems of comparability and generates potentially undesirable behavioral incentives. Universities that perform activities that are not measurable are also unable to represent their community engagement accurately. According to Rossi and Rosli (2015), such inability to measure and communicate results may over time lead these institutions to move away from engagement activities whose performance is not adequately acknowledged and toward activities more accessible to discrete measurement. Doing so, however, may not actually translate into improved engagement activities, nor generate more significant benefits for the stakeholders that these universities interact with.

Implications of Community Impacts

Community impacts are challenging to capture and evaluate, a difficulty attributable to a broad range of factors noted by various authors (Bornmann, 2012; Charles et al., 2010; Howard, 2014; Jongbloed, 2008; Pearce et al., 2008; Rossi & Rosli, 2015). Indicators of community impact sometimes do not entirely cover the outcomes of a university–community engagement activity in the community. For example, because the impact of academic research is long–term and often indirect (Jongbloed, 2008), it is challenging to capture and quantify. Impact measures may be biased toward academic work that gains visibility, which tends to receive additional attention just because of such visibility (Jongbloed, 2008). Rossi and Rosli (2015) observed that since universities specializing in the arts and humanities rarely produce patentable research outputs, relying upon indicators focused on patents and licenses could introduce bias and prevent these universities from correctly representing their engagement activities.

Some indicators are derived from the community members' perspective of the engagement activity being evaluated. Although it is important to include community perspectives, Charles et al. (2010) noted that the university and the community may hold different perspectives; a project that delivered research income and publications might be positively viewed by a university, but if it was expected to deliver visible improvements to the community and did not, then the community might take a very different view. The perceived impact is therefore a complexly determined judgment that may be influenced more by the receptiveness of the user than by the efforts of the engagement to reach people.

Singh (2017) observed that community impacts often go unstated. Impact is often understood as a change that community engagement produces upon the economy and society at large. However, referring to such change as attributable poses some problems. A time lag occurs between the effect produced and the engagement activities that are supposed to have generated it. Therefore, it is difficult to ascertain the extent to which the engagement results were the sole or most significant causes of the effect (Reale et al., 2017).

Conclusion and Recommendations for Universities, Academics, and Community Partners

This literature review identified key performance indicators of three domains of university–community engagement: purpose, process, and community impacts. These three domains were chosen to bring out a community-based perspective that represents the community members. We establish that a member of the community concerned with a university's commitment to its community would look at these key indicators. This study has revealed that the use of these indicators has some implications that should be considered during evaluation. The study also establishes that a number of challenges remain. The following section outlines the challenges as well as the recommendations for each.

Methodological Limitations

This study reveals challenges of measurement, whereby tools for measuring university–community engagement are limited. Some frameworks fail to include community partners and indicators in the evaluation process, and evaluate university–community engagement only from a university's perspective. Furthermore, various frameworks lack comprehensive indicators to represent engagement activities that embrace a di-

verse range of fields, including sciences and arts. To deal with this challenge, we propose establishing tools that involve community partners in the evaluation process as well as comprehensive sets of indicators. These indicators should be suitable for use across a wide range of engagement activities as well as regions to enable comparability and benchmarking. In measuring the impact of teaching, numerous established methods are continually refined (Bornmann, 2012), and the same should occur in university–community engagement. Doing so will ensure that measurement is keeping up with changes in engagement strategies and activities and that evaluation is measuring the relevant aspects of engagement.

Limitations on Quantifying Performance Indicators of University–Community Engagement

University–community engagement approaches have been found to occur in diverse ways across universities, projects, faculties, and departments. Such variation could result from the nature of the universities' objectives and characteristics, community needs, and stakeholders' priorities. This diversity in turn leads to a myriad of indicators that are hard to observe and quantify. We therefore agree with Rossi and Rosli (2015) that the range of engagement indicators considered must be broad enough to reflect the variety of activities undertaken by universities. If the choice of activities to be measured is not comprehensive enough, the indicators may misrepresent the university–community engagement performance for universities that engage in activities that are not easily measured. Bornmann (2012) pointed out that university–community engagement evaluation should take into account the multiplicity of models of a successful community engagement endeavor. Evaluation thus should be adapted to the university's specific strengths in teaching, research, outreach, and the cultural context in which it exists. Additionally, developing frameworks for conducting evaluation throughout the process of planning, delivering, and assessing the outcomes of the community engagement projects is important for benchmarking. Since the three steps affect each other, it is important that policymakers understand the differences in the degree of support and planning allocated to each during the initial stages of an engagement program, and the effect that such distribution has on the outcomes.

Appreciating the relationship among the three steps would allow more meaningful and insightful comparisons between different engagement systems and projects.

Further, relying on indicators reflecting the total amount of engagement activities performed, rather than on the degree of activities per unit staff, could disadvantage smaller universities (Rossi & Rosli, 2015). Therefore, during identification of indicators, it is important to consider the actual degree and intensity of activities performed per unit, not only the number and quantity of activities, which could be higher in universities with a higher number of staff and greater resources.

Limitations on Quantifying the Variety of Community Impacts

As revealed by this study, potential spillover benefits are common, whereby impacts of university–community engagement may extend beyond the intended beneficiaries. Therefore, evaluation should consider not only those beneficiaries intended in the initial arrangement, but also a wider range of other potential beneficiaries. For example, the informal interaction of academics and nonacademics often brings about knowledge diffusion and changes, which can hardly be confined to specific impact indicators. Thus, in order to deal with shortcomings affecting the use of indicators, there is need to devise ways of capturing changes that may not conform to explicit indicators. Also, impacts of university–community engagement activities may stretch over extended periods of time, so it is important to design tools that represent such impacts.

Further, impacts of university–community engagement extend beyond economic advantages to confer social benefits. Thus, capturing such impacts requires a comprehensive range of indicators that reflect work aimed not only at economic benefits but also social benefits. Furthermore, as suggested by Reale et al. (2017), evaluation should combine or integrate narratives with relevant qualitative and complementary quantitative indicators. This approach is helpful in grasping the multidimensional and contextual nature of complex community phenomena.

Causality Problem

Due to the difficulty in singling out the specific cause for a given impact, it may be

necessary to shorten the time devoted to evaluation. Evaluation should be performed much faster in order to establish the extent of effects produced by certain activities. Impact assessment methods should also consider other factors that may bring about the same impact.

Communication Problems and Misrepresentation

To deal with misrepresentation, communication on engagement activities and impacts should involve individuals acquainted with the partnership principles of the engagement initiative. Doing so would reduce misrepresentation of engagement activities. Despite attempts by university–community professionals to increase awareness of their work, the responsibility for communications may be overseen by individuals with only communication backgrounds (Arrazattee et al., 2013). There is therefore need to enhance teamwork between university–community engagement professionals and communication professionals. Such co-operation would ensure full representation of activities and also ensure the story is told from both the university's and the community's perspective.

About the Authors

Irungu Ruth Wanjiru is a PhD researcher of higher education policy at the College of Public Administration at Nanjing Agricultural University.

Liu Xiaoguang (corresponding author) is an associate professor of higher education management and public policy analysis at the College of Public Administration at Nanjing Agricultural University.

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