Research article

Assessing higher education institutional stakeholders' perceptions and needs for community engagement: An empirical evidence from Uganda

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ABSTRACT

Community Engagement (CE) is an accredited path for Higher Education Institutions (HEIs) to address development challenges facing communities. However, establishing practical CE approaches is difficult due to a lack of information on stakeholders’ perceptions and needs for CE. This paper intends to fill this gap by examining engaged stakeholders’ perceptions and needs for CE. We conducted a survey among 450 stakeholders, categorised as dairy farmers, students, and faculty members of a case study HEI in Africa. One-way ANOVA findings showed that the three categories perceived CE differently and had multiple needs. To harness reciprocal engagement, HEIs should create more CE opportunities and address stakeholders’ needs such as establishing structures, allocating time for engagement elements, financial support, and communication.

1. Introduction

When communities are confronted with several development challenges, community engagement (CE) has progressively ended up a predominant mission (Cook and Nation, 2016). The mission is implicitly reorganised as a path for higher education institutions (HEIs) to demonstrate pertinence to the communities’ complex social, economic, educational, and cultural needs (Clifford and Petrescu, 2012; van Schalkwyk and de Lange, 2018; Ward and Hazelkorn, 2012). For instance, Kruss (2012) and (Paleari et al. (2015) plausibly argue that CE is a remedial solution for HEIs to meet the needs, social expectations, and rising demand for knowledge by stakeholders and communities. Correspondingly, Fitzgerald et al. (2012) observe that, through CE, HEIs can play fundamental roles in empowering stakeholders and communities to outline pathways toward upward mobility. For this reason, governments and politicians since the mid-20th century encouraged HEIs to halt detaching themselves from outside entities, instead serve as critical instruments in tackling the challenges typically facing societies and local communities (Franklin, 2009; Goddard et al., 2016; Mugabi, 2015; Pinheiro and Langa, 2015). Research has shown that CE is a tremendous bridge between academic institutions, stakeholders, and the general community (Olowu, 2012).

Existing studies demonstrate an incredible deal of academic work theoretically explaining the CE concept and practice. In principle, CE emerged to address the traditional ivory tower approach’s challenges to capacity building in HEIs (Mtawa et al., 2016; Shannon and Wang, 2010). The conventional approach focused on HEIs reaching out to communities or their stakeholders in an expert knowledge delivery model (Bruning et al., 2006; Jinkins and Cecil, 2015). This approach has witnessed a transformation of its long-standing ability as creators of knowledge and human capital (Symaco and Tee, 2019) to a holistic and reciprocal approach (Goddard and Kempton, 2016). Compared to traditional outreach methods, CE requires a great deal of commitment to building enduring relationships between academic institutions and the communities (Mehta et al., 2015; Shephard et al., 2017). Furthermore, studies highlight that the CE process requires institutional leadership support to create learning and research agendas that consider the communities’ strengths and needs (Goddard and Kempton, 2016; Martin and Pyles, 2013).

In this regard, researchers characterised CE as a collaboration between HEIs and their larger communities for the mutually beneficial exchange of knowledge and resources in the context of partnership and reciprocity (Bhagwan, 2018; Fitzgerald et al., 2016; Holley and Harris, 2018; Ramachandra and Mansor, 2014). Further, studies emphasise that CE aims at working with the community rather than working for the community (Frank and Sieh, 2016; Korzun et al., 2014a). The central core process involves HEIs reciprocally engaging different internal and external stakeholders in sharing valuable resources. Creating,
disseminating new knowledge, improving understanding, and involving partners in mutual dialogue are crucial elements in CE (Murphy and McGrath, 2018; Onwumere, 2018). A research study (Phillipson et al., 2012) explains that CE is built on interactive approaches that involve end-users throughout the overlapping stages of engagement, jointly identifying community problems and solutions to those problems. The outcome of such partnerships is mutual benefits to all partners (Bhatnagar et al., 2020; Quilliman et al., 2018). Notably, partners have a critical role in the engagement process. Therefore, HEIs should increasingly avail opportunities and employ approaches that actively bring on-board their partners.

Javen and Wenger’s concept of Communities of Practice (CoP) is enlightening to this study. It profusely illustrates the change from the traditional reproduction model and delivering expert knowledge to active reciprocal partnerships and collaborations with key stakeholders (Korzun et al., 2014b). In the current study, the authors advocate that the HEIs CE method should be finally rooted in the CoP concept. The concept emphasizes cooperative learning in a shared human behaviour domain (Hart et al., 2014). Members engage in joint activities, support each other, and share information (Reilly et al., 2012). They foster reciprocal relationships that help them learn from each other through innovative workshops, internet forums, web applications, or dialogue. Practitioners interface to illuminate potential problems, exchange ideas, construct tools, and create connections with peers. The process becomes a win-win situation where institutions can strengthen their academic mission, and communities can advance their social agenda (Rubens et al., 2016). From the CoP perspective, HEIs can take care of the specific needs of their stakeholders. Chile and Black (2015) demonstrated that interactions aid beneficial partnerships and address stakeholders’ specific needs.

Extant literature shows that Collaborations yield multiple benefits to institutions and communities. Attree et al. (2011) pointed out that active bilateral engagements benefit participants by producing positive psychological consequences for their well-being. Similarly, CE strengthens partnerships between the institution and the community (Quillinan et al., 2018). During the engagement, the time spent creates a strong bond between institutions and their outside partners (Morrell et al., 2015). Three studies suggested that CE facilitates HEIs to access fruitful research information (Furco, 2010; Mbah, 2016; Tarus et al., 2017). Similarly, research studies indicate that CE creates opportunities for HEIs to get closer to the community and brands the community’s institutional image (Franz et al., 2012; Goddard and Kempton, 2016; Selvaratnam, 2013). According to Bruning et al. (2006), CE fosters the development and improves institutional public relations. This symbiotic relationship boosts human capital, economic, and cultural development (Clifford and Pet- rescu, 2012). In this case, HEIs play the facilitator role by attempting to release change, empower critical stakeholders to self-diagnose problems, and create conditions that can lead to self-realization and transformation (Mugizi, 2018). However, Mbah (2019) explained that HEIs build beneficial engagements with their key stakeholders.

It is stated that HEIs develop their social niche through engagements with communities or programs geared towards engaging internal and external stakeholders (Bhatnagar et al., 2020). A research study (Benneworth and Jongbloed, 2010) pointed out that CE rest on institutions’ ability to undertake practices that include vital stakeholders constructively. Benneworth and Jongbloed further described a standard HEI stakeholder set, highlighting specific examples from various categories. Amongst these are the employees (administrative, faculty members, and the support staff), communities such as student groups, communities (special interest groups, community members). The current study considers three HEIs stakeholders (students, faculty members, and dairy farmers from the community). These are selected based on several factors in the existing literature. Cho (2017), Frank and Sieh (2016), and Hart et al. (2009) observed that faculty members and students are absolute stakeholders with the greatest priority of the institution.

Similarly, Goddard and Kempton (2016) pointed out that students could be agents of knowledge transfer and establish social relationships when given the opportunity for work placement in the community. According to Brisbin and Hunter (2003), establishing contacts for extensive student participation and collaborations with community partners is essential. Equally important, other studies show that CE relies on university faculty members’ backbone (Gorski, 2016; Kuttner et al., 2018). These perform duties of administering, coordinating, supporting, and leading engagement activities. Adekolu et al. (2018) and Gorski (2016) suggested that the institutional administrators must create time and offer necessary support to engage faculty and students’ engagement. CE becomes effective when HEIs involve students, faculty, administrators, and other stakeholders in mutually beneficial activities (Smoluk, 2018). Also, the current study considers dairy farmers as external institutional stakeholders. Dairy farming’s potential to employ and provide income to community stakeholders has attracted researchers and policymakers from many countries (Protection and Speedy, 2011; Thornton, 2010). As such, HEIs involve dairy farmers in multiple engagements to support government policy and community development programs. Nirmal et al. (2016) conducted research demonstrating initiatives where dairy farmers offered opportunities to engage with institutions to enrich their knowledge of animal husbandry.

Existing literature is clear about the importance of institutional focus on the stakeholders’ perceptions and needs during engagement activities (Frank and Sieh, 2016; Strom, 2011). However, there are no precise blueprints on stakeholders’ perceptions and needs for CE. Two studies show an unbalanced relationship where institutional community stakeholders’ perceptions are typically quiet (Sandy and Holland, 2006; Wattman et al., 2007). Moreover, one empirical study focused on faculty members’ and students’ CE perceptions (Cho, 2017). As such, multiple stakeholders’ perceptions of CE require attention. The current study draws on empirical evidence of HEIs stakeholders’ perception and needs for CE using Mountains of the Moon University (MMU) as a case. The university was established in 2005 with a niche to engage in quality research, teaching, and CE. The institution enrolls students from nearly all parts of the country. However, a significant number come from the encompassing Rwenzori rural farming community. Individual faculty members or departments have actualized a few CE ventures. For instance, some faculty members engaged in action research with community stakeholders. The focus is to generate knowledge that would inform development actors in making informed decisions at planning and policy levels. Students, too, are involved in internship training, research, and field placements. The mutual benefit is to produce competent students with practical skills to deal with community challenges. Besides, with support from VLIR UOS, MMU set up a dairy development center to empower and strengthen dairy farming practices in the Rwenzori region. Through distinct engagements, dairy farmers participated in several participatory workshops to identify their training needs. Ten dairy farmers and five faculty members prioritised the needs and developed a training manual in dairy farming. They also translated the manual into the local language to suit all classes of dairy farmers. The manual focused on adopting modern farming practices, animal nutrition, breeding and artificial insemination, and animal health. The institution later utilized the developed training manual to conduct several pieces of training to scale-up its engagement with dairy farmers in the region. It is interesting to note that the study used a cohort approach to investigate the dairy farmers’ perceptions and CE needs.

With this background, the current study presents the engaged stakeholders’ perceptions and needs for CE. Assessing HEIs stakeholders’ CE perceptions and needs in the Ugandan context could significantly contribute to the dynamic global movement, study, and debate around this topic. Furthermore, understanding the perceptions and needs of institutional stakeholders is valuable for those designing future CE interventions. It aids the development of effective CE frameworks. Therefore, the main research questions for this research were: What are the stakeholders’ perceptions of CE with HEIs? And what are the HEIs stakeholders’ needs for practical CE? From this background, section two presents the methodology, followed by research findings. In section four,
the discussion of the findings is presented, followed by concluding remarks and study limitations that shape the future for further research.

2. Research methodology

This study employed mixed research methods to investigate the research questions. We used a quantitative approach to investigate the institutional stakeholders’ perception of CE. Additionally, we employed a qualitative approach to determine the stakeholders’ needs for CE. This research method’s strength is that the quantitative data collected produce empirical data. After consulting relevant literature on past studies regarding HEIs or university engagement with communities or stakeholders, we developed three instruments (Holley and Harris, 2018; Mbah, 2019; O’Meara and Jaeger, 2016; Selvaratnam, 2013). The current study measured institutional stakeholders’ perceptions of CE are subjectively basing on potential benefits, opportunities, and challenges involved in the process (Zepke, 2013). Each of these three key variables of stakeholders’ perceptions measured eight indicators. An appropriate measurement instrument is essential to demonstrate the subjective elements that will quantitatively show how HEIs stakeholders perceive CE. Stakeholders’ perceptions are measured as illustrated in Table 1.

Simple random and purposive sampling was employed to administer the survey that targeted stakeholders who participated in MMU CE activities. Simple random sampling was used to reduce the potential of human bias in the selection of respondents. Consequently, this sampling technique provided the population sample. The survey gathered (n = 450) respondents in September and October 2019. Respondents were categorized into three key stakeholder groups, namely: dairy farmers (n = 203), Faculty members (n = 53), students in the final year from the different schools at MMU, n = 194). The survey covered three main sections: Section A elicited demographic data of respondents; Section B asked respondents to indicate their level of agreement on a one to five-point Likert scale that anchored from (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, to (5) strongly agree with the statement that examined their perceptions as illustrated in Table 1 above. Finally, Section C contained an open-ended question requesting respondents to outline their needs for practical CE. The rationale for having this type of questionnaire is that the input which triggers people’s response is controlled so the output can be reliably compared (Bliss, 2003).

2.1. Data collection and sampling technique

We used a Survey with both closed and open questions to collect empirical data. After consulting relevant literature on past studies regarding HEIs or university engagement with communities or stakeholders, we developed three instruments (Holley and Harris, 2018; Mbah, 2019; O’Meara and Jaeger, 2016; Selvaratnam, 2013). The current study measured institutional stakeholders’ perceptions of CE are subjectively basing on potential benefits, opportunities, and challenges involved in the process (Zepke, 2013). Each of these three key variables of stakeholders’ perceptions measured eight indicators. An appropriate measurement instrument is essential to demonstrate the subjective elements that will quantitatively show how HEIs stakeholders perceive CE. Stakeholders’ perceptions are measured as illustrated in Table 1.

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| Variable | Code | Items | Author(s) |
|----------|------|-------|-----------|
| Benefits | BEN1 | Sharing knowledge | Quillinan et al. (2018), Onwuemele (2018) |
| | BEN2 | Sharing skills | Holley and Harris (2018) |
| | BEN3 | Sharing resources | Mbah (2019) |
| | BEN4 | Sharing information | O’Meara and Jaeger (2016) |
| | BEN5 | Offered real learning or teaching experience | Selvaratnam (2013) |
| | BEN6 | Strengthening partnerships | (2015) |
| | BEN7 | Cooperative learning | Mehta et al., (2015) |
| | BEN8 | Addressed stakeholders’ expectations | Morrell et al. (2015) |
| Opportunities | OPP1 | Opportunities for engagement | Selvaratnam (2013) |
| | OPP2 | Involve stakeholders | Morrell et al. (2015) |
| | OPP3 | Equal engagement opportunities | Mehta et al., (2015) |
| | OPP4 | Variety of engagement | Morrell et al. (2015) |
| | OPP5 | Share research findings | Adekulu et al. (2018) |
| | OPP6 | Information regarding engagement | Rubens et al. (2016) |
| | OPP7 | Consult about engagement | Holley and Harris (2018) |
| | OPP8 | Collaborate with different stakeholders | |
| Challenges | CHA1 | Limited time for engagement | Winkler, (2013) |
| | CHA2 | Limited resources | Gorski (2016) |
| | CHA3 | Inappropriate engagement approaches | Onwuemele (2018) |
| | CHA4 | Little motivation | O’Meara and Jaeger, (2016) |
| | CHA5 | Inadequate awareness | Quillinan et al. (2018) |
| | CHA6 | Inadequate support | Morrell et al. (2015) |
| | CHA7 | Inadequate flow of information | Adekulu et al. (2018) |
| | CHA8 | Other roles hinder CE | Holley and Harris (2018) |

Note: Survey items for stakeholders’ perceptions measured on a Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.
inform the study findings. A qualitative description of the stakeholders' needs was also elaborated in the findings section to substantiate the different groups' needs.

2.3. Ethical approval

The institution required no ethical approval for this study. However, the authors acquired Informed consent from all participants in the study.

3. Findings

3.1. Scale reliability

The reliability of the measurement scale for stakeholders' perceptions of CE was assessed by calculating the Cronbach's alpha values for the items that measured each variable and for the pooled sample. The results in Table 2 revealed acceptable Cronbach alpha values varying from 0.65 to 0.91. Hence none of the items was deleted.

3.2. Descriptive results for stakeholders' perceptions of community engagement

The descriptive statistics in Table 3 presents means and standard deviations for the three variables that measured stakeholders' perceptions of CE. The sub-items measuring BEN scored relatively high means for the three categories. On average, dairy farmers scored mean = 4.00 (0.54), students mean = 3.86, (0.53), and faculty members mean = 4.02 (0.51) as perceived BEN of CE. These findings imply that respondents highly agreed that CE is beneficial.

Besides, as indicated in Table 3, the sub-items for OPP were 3.69 (0.58) for dairy farmers, 3.36, (0.60) for students, and 3.52. (0.62) for faculty members. These findings show that the three categories of respondents were neutral about OPP for engagement.

Findings in Table 3 further show that the CHA's sub-items scored the lowest mean values for dairy farmers, 2.74 (0.72). However, students and faculty members scored 4.21 (0.71) and 3.81 (0.90), respectively. These results imply that, on average, dairy farmers disagreed that CE is CHA. However, students and faculty agreed that CE is a CHA.

3.3. Pooled sample perceptions of community engagement among groups

Table 4 ANOVA analysis of variance was conducted to determine whether there are statistically significant differences in CE perceptions among the categories. Findings show statistically significant differences among the group means. The variables BEN, OPP, and CHA generated F(4.01, P = .017) and F (15.63, p = .001), and F (197.98, p = .001), respectively. In general, findings imply significant differences in perceptions of CE among the three groups. However, these findings do not tell us which specific pairs statistically differ from each other, necessitating a post hoc follow-up.

A post hoc follow-up was conducted to determine which group means differ from each other. To test the homogeneity of variance, the Welch's test was used at an alpha level of 0.05. The robust test for equality of means for the three variables revealed a statistically significant effect, Welch's p < .018 for BEN, p < .000 for OPP, and lastly, p < .000 for CHA. The post hoc comparisons using the Scheffe procedure was used due to the unequal sample sizes of the three categories of the group.

Findings in Table 5 revealed a statistically significant difference in BEN perceptions among dairy farmers and students M = .143, P < .030. Findings imply that the CE benefits the two groups differently. However, no significant differences were detected in BEN among dairy farmers and faculty members and among faculty and students.

Concerning OPP for CE, findings in Table 5 show statistically significant differences among dairy farmers and students, M = .333, P < .000, and among dairy farmers and faculty members, M = .246, P < .030. These findings indicate there were no similarities in perceptions of OPP for CE among the two groups. However, the CE perceptions in terms of OPP were not statistically significant among students and faculty members.

Furthermore, the post hoc results in Table 5 showed differences in CE perceptions in CHA among the group categories. There were statistically significant differences among dairy farmers and student M = 1.46, P < .000, dairy farmers, and faculty members M= 1.07, P < .000, and among faculty and students M = 0.30, P < .003. These findings indicate that the groups perceived CHA involved in CE differently.

3.4. Stakeholders' needs for community engagement

The last item in the survey required the respondents to identify their needs for CE. The qualitative responses were categorised to obtain the percentages. In general, findings in Table 6 show that the majority of the respondents identified the need to create time for CE, 50.4%, followed by frequent visits, follow-ups, and pieces of training 15.6%. Financial support for CE 11.6% and a contact office for CE 10.0% were also among the respondents' identified needs. Besides, respondents reported the need to improve communication and information flow about CE initiatives 2.9% and interactive training and workshops 4.4%. In terms of group categories, most faculty members, 16.3%, and students 55.5%, consistently identified the need to create time for community engagement. In contrast, most dairy farmers 75.0%, reported the need for frequent visits and follow-up after engagement activities. These results show that the three group categories had different needs for CE.

3.5. Qualitative results for stakeholders’ needs for community engagement

In the following section, we offer a qualitative description to substantiate the different group needs for CE.

3.5.1. Students

The students identified six needs for CE. These included creating time for CE, establishing a CE contact office, financial support for CE, improving communication, following up engagement activities and interactive workshops, and radio programs. The majority of students, 55.5%, reported that the institution allows them limited time for CE. In their responses, they highlighted that the university timetable does not indicate the time for CE. The following quotations are drawn from students’ responses.

Lectures are conducted all through the semester following the university timetable. The one month at the end of the second semester is continuously implied for practical examinations. The university ought to permit us more time for down-to-earth CE lessons and exercises. We need a
balance between coursework responsibilities and community activities. We need orientations about engagement responsibilities. These unique challenges can be addressed through mutual interactions among stakeholders.

Slightly, 51.1% of the students stressed the need for a contact office for community engagement. This office would help to sensitise and coordinate students' engagement activities. In addition, the office would act as a link between the institution and the community stakeholders. Students mentioned that: The institution must have an office that supports and creates more CE opportunities for students.

Slightly more than a third of the students, 38.5%, cited the need to improve communication and information flow. These were followed by 32.7% who cited the need for financial support for practical CE.

Table 3. Stakeholders' perceptions of community engagement (Means and standard deviations).

| Group category                  | Codes | Mean (SD) | Mean (SD) | Mean (SD) |
|---------------------------------|-------|-----------|-----------|-----------|
| BEN                             |       |           |           |           |
| Sharing knowledge               | BEN1  | 3.99 (0.87) | 3.98 (0.70) | 4.07 (0.64) |
| Sharing skills                  | BEN2  | 4.25 (0.71) | 4.05 (0.62) | 3.98 (0.77) |
| Sharing resources               | BEN3  | 4.12 (0.65) | 3.86 (0.95) | 3.83 (0.77) |
| Sharing information             | BEN4  | 3.96 (0.94) | 3.89 (0.71) | 4.15 (0.71) |
| Offered real learning or teaching experience | BEN5  | 3.93 (1.07) | 3.94 (0.60) | 4.03 (0.55) |
| Strengthening partnerships      | BEN6  | 4.00 (0.87) | 3.87 (0.78) | 4.11 (0.60) |
| Cooperative learning            | BEN7  | 4.06 (0.87) | 3.78 (0.81) | 4.03 (0.58) |
| Addressed stakeholders' expectations | BEN8  | 3.72 (1.19) | 3.51 (1.01) | 4.03 (0.61) |
| Total mean benefits             | BEN   | 4.00 (0.54) | 3.86 (0.53) | 4.02 (0.51) |
| OPP                             |       |           |           |           |
| Opportunities for engagement    | OPP1  | 3.73 (1.02) | 3.41 (1.02) | 3.69 (1.13) |
| Involve stakeholders             | OPP2  | 3.83 (1.05) | 3.55 (1.01) | 3.71 (0.92) |
| Equal engagement opportunities   | OPP3  | 3.82 (1.01) | 3.61 (0.98) | 3.77 (0.77) |
| Variety of engagement           | OPP4  | 4.00 (0.94) | 3.46 (1.15) | 3.26 (1.05) |
| Share research findings          | OPP5  | 3.98 (0.91) | 3.63 (0.87) | 3.20 (1.06) |
| Information regarding engagement | OPP6  | 3.89 (1.09) | 3.85 (0.72) | 3.92 (0.72) |
| Consult about engagement         | OPP7  | 2.26 (1.33) | 2.22 (1.04) | 2.79 (1.00) |
| Collaborate with different stakeholders | OPP8  | 4.04 (1.09) | 3.17 (1.21) | 3.24 (1.05) |
| Total Opportunity                | OPP   | 3.69 (0.58) | 3.36 (0.60) | 3.45 (0.67) |
| CHA                             |       |           |           |           |
| Limited time for engagement      | CHA1  | 2.53 (1.37) | 4.25 (0.89) | 3.96 (0.96) |
| Limited resources                | CHA2  | 2.47 (1.31) | 4.09 (0.97) | 3.92 (1.07) |
| Inappropriate engagement Approaches | CHA3  | 2.49 (1.28) | 4.06 (0.88) | 3.73 (1.11) |
| Little motivation                | CHA4  | 2.51 (1.30) | 4.26 (0.90) | 4.00 (1.09) |
| Inadequate awareness             | CHA5  | 2.29 (1.37) | 4.17 (1.06) | 3.30 (1.38) |
| Inadequate support               | CHA6  | 3.07 (1.31) | 4.25 (0.84) | 3.94 (1.08) |
| Inadequate flow of information   | CHA7  | 3.17 (1.30) | 4.20 (0.92) | 3.84 (1.15) |
| Other roles hinder CE            | CHA8  | 3.37 (1.35) | 4.38 (1.35) | 3.83 (1.29) |
| Total Challenges                 | CHA   | 2.74 (0.72) | 4.21 (0.71) | 3.81 (0.90) |

Table 4. Pooled sample Mean values of stakeholders' perceptions of community engagement.

| Variables | Mean (SD) | F values | Sig. |
|-----------|-----------|----------|------|
| BEN       | 3.94 (.542) | 4.10 | .017 |
| OPP       | 3.52 (.622) | 15.63 | .001 |
| CHA       | 3.05 (.813) | 197.98 | .001 |

Note: The mean difference is significant at the *P < 0.05 level.

Table 5. Post hoc results comparing stakeholders' perceptions of community engagement.

| Scheffe test | Variables                  | BEN          | OPP          | CHA          |
|--------------|----------------------------|--------------|--------------|--------------|
|              | Mean difference            | P-value      | Mean difference | P-value      | Mean difference | P-value      |
|              | Group category             |              |              |              |              |              |              |
|              | Dairy farmers vs students  | .143**       | .030         | .333**       | .000         | 1.46**       | .000         |
|              | Dairy farmers vs academic staff | .013       | .988         | .246*       | .030         | 1.07**       | .000         |
|              | Students vs academic staff | .157         | .171         | .086         | .649         | 0.39*        | .003         |

Note: The mean difference is significant at *P < 0.05, and **P < 0.001. Bold values emphasise the positive relationships that obtained significant differences among groups.
increase students' involvement in the CE, one of the respondents identified that:
As students, we continuously get stuck amidst field practical activities because of limited finances. The university ought to adequately provide sufficient funds for CE activities.

3.5.2. Faculty members
Faculty members reported five needs for successful CE. These included making time for CE, establishing a CE contact office, financial support for CE, improving communication, interactive workshops, and radio programs. The majority, 16.3%, reported the need for time for CE. They specified that an overwhelming teaching load could not permit effective CE as one participant stated;

I handle five-course units for the pre-service department and four course-units for the in-service department per semester. Besides teaching, I set and check coursework, central tests, examinations. This load indeed constrains time for CE and even limits time for personal research. We require sufficient time for all activities of the university but not only teaching.

Another faculty member specified that teaching two standard course units with many students hinders CE roles. Also, other commitments, for instance, supervising students' research, attending occasional meetings, cannot presently permit CE to sprout.

Perhaps not surprisingly, given their strong sense of identity as faculty members, they consistently described a struggle between fulfilling the teaching and CE. They described the difficulty of fulfilling their teaching role without sacrificing personal time and income. These opportunity costs, in turn, signified constraints to faculty members fulfilling the engagement mission. In this case, the respondent indicated that participation in CE depends on personal time and income. This finding demonstrates that the university faculty were struggling to fulfill the CE mission.

Besides, faculty members, 15.4% distinguished that inadequate financial resources hinder active participation in effective CE. Deprivation of specific budgets for faculty participation brands CE a frustrating task. In their responses, academic staff continually mentioned that:

We need the institution to honour faculty members that individually engage the community for the institution's sake. We would have revived the outreach program in the School of Education, but we need financial support. The university seems to prioritise other activities but not CE.

Furthermore, the feeling of abandonment of CE activities seemed particularly acute at this institution. The problem was catalysed because the institution lacks a CE structure, as identified by 13.3% of the faculty. One participant highlighted:

The human resource office conducts staff evaluations at every end of the year. One of the critical areas in this appraisal is CE. However, we do not know whether the academic registrar's office or the human resource is responsible for CE activities during the academic term. We require a structure that can unanimously support CE activities.

3.5.3. Dairy farmers
Dairy farmers identified eight needs for CE. These included frequent follow-up of engagement activities, adequate information flow, interactive workshops, and radio programs, and creating time for CE. They also identified the need for establishing a CE contact office, financial support, veterinary services, and research on ticks, subsidising animal drugs, and improving the milk price. The majority, 72.9%, stressed the need for frequent follow-up of CE activities. They expressed that the institution involved farmers in several pieces of training and workshops without follow-ups after training. Dairy farmers, in their responses, explained:

We had two workshops conducted by MMU staff four years back. Some farmers missed the opportunity to participate in these pieces of training due to inadequate information. During these workshops, farmers raised the problems of ticks attacking animals and low prices for dairy products. However, follow-up was not done, and the issues still exist. The institution should provide a remedy to these problems.

Besides, dairy farmers 68.8% consistently identified the need for workshops, short courses, and radio programs. The following quotes are responses of three dairy farmers.

We need more workshops in areas of managing our dairy farming records and acceptable farming practices. We also need pieces of training in other fields but not only dairy farming.

Dairy farmers also mentioned improvement in communication 53.8%, financial support 51.9%, and creating time 28.2% for CE. Besides, 5.1% of the dairy farmers said that their animals are always attacked by parasites (ticks) and need veterinary services. They noted that the drugs on the market could not treat animal diseases. Besides, 0.9% of the dairy farmers also mentioned that they face low milk prices, especially during wet seasons. The institutions could help in identifying potential buyers of the milk.

4. Discussion of the findings
This current study sought to understand the perception as well as the needs of HEIs stakeholders for CE. We based the research on the concept
of CoP (Reilly et al., 2012) to understand the institutional stakeholders' perceptions and needs for CE. Using survey data collected from 450 respondents of a case study HEI, the study revealed how institutional stakeholders perceived CE. Also, in an open-ended question, respondents highlighted their needs for effective CE. In the following paragraphs, we discuss the results from our study before offering conclusions.

The descriptive findings regarding CE's BEN suggest a higher individual evaluation of MMU contributions to stakeholders’ engagement activities. This finding is consistent with previous research, showing that actively engaged participants perceive their involvement BENs (Attree et al., 2011; Sandy and Holland, 2006). Survey findings showed that participants neutrally perceived the OPP for engagement, implying an unutilised potential to maximise CE. This finding is similar to one study, demonstrating the lack of engagement prospects resulting in participants’ failure to realise their collaboration with the institution (Mehta et al., 2015). It is suggested that OPP be enhanced for students and faculty to address community needs (Martin and Pyles, 2013). Similar research argues providing chances for student and academic staff hands-on experience is crucial for putting theory into practice (Jenkins and Cecil, 2015; Selvaratnam, 2013). The descriptive findings also showed that students and faculty members highly perceived CHA, whereas the dairy farmers disagreed that CE is an obstacle. In this regard, the dairy farmers may be willing to participate in MMU engagements, while impediments may hinder students and academic staff practical CE. These findings are similar to (Morrell et al., 2015), demonstrating that CHA inhibits effective participant involvement in engagement activities.

The findings above indicate that there are different CE perceptions regarding BEN among students and dairy farmers. These findings are consistent with (Frank and Sieh, 2016), revealing that CE benefits participants differently. For instance, students benefit by gaining practical hands-on skills they would have missed through conventional teaching (Korzun et al., 2014a; Quilliman et al., 2018; Sandy and Holland, 2006). In contrast, dairy farmers benefit from obtaining knowledge and skills to manage dairy farming as a profitable income-generating activity. Another research study (Tarus et al. (2017) expressed a similar view that CE activities benefit farmers in acquiring record-keeping knowledge.

Similarly, dairy farmers gain knowledge in animal husbandry (Nirmal et al., 2016). The current research suggests that MMU should support mutually beneficial engagements with all stakeholders. For instance, enhancing the professional development of university faculty in CE as proposed by Sheppard et al. (2017) when referring to Community-engaged scholarship to advance CE. Also, the findings suggest that HEIs emphasise engagements that rotate towards the academic entity and CE.

Furthermore, responses of study participants revealed that the institution offers moderate OPP for CE. However, other research provides contradicting evidence showing that institutions offer great chances for engaging faculty, students, and community members (Selvaratnam, 2013). Participants in Selvaratnam’s study indicated that the course-based CE availed great chances for students’ engagement with local communities. In another study, Morrell et al. (2015) demonstrated practical OPPs for engaging stakeholders through action research projects. The current research suggests that the institutions must avail OPPs for their stakeholder engagement. Bhatnagar et al. (2020) recommended that CE be part of the institutional curriculum to increase students, faculty members, and community interaction OPPs. In a similar vein, Goddard et al. (2016) state that providing engagement OPPs should form part of an engaged institution ensuring community partners’ full participation.

The study shows that there were differences in how participants perceived the CHA involved in CE. For instance, students tend to have limited time while university faculty are challenged because the institution does not consider CE as part of their workload. The study’s findings are entirely consistent with (Quilliman et al., 2018), who found out in their research “Lessons learned from community engagement initiatives within Irish higher education” that CE becomes challenging when it is not recognised as part of their workload. The findings are also similar to those of (Sandy and Holland, 2006), which found that although community partners are willing to devote time to educate university students, they often perceived the engagement CHAs. These hindrances are related to the academic calendar, logistics, workplace preparedness of students, and difficulty interacting directly with the faculty. The challenges involved for instance, limited time, little motivation, and other obligations hinder CE’s successful implementation. These results suggest that MMU should respond hindrances to stakeholders’ participation in CE initiatives. Moreover, Rubens et al. (2016) suggested that such CHAs can be addressed through establishing support structures and diversifying sources of funding for CE.

Multiple needs for effective CE were identified by the three categories of institutional stakeholders, including creating time, contact office and structure, financial support, and CE elements’ follow-up. These findings are in line with (Morrell et al. (2015) observation that CE activities suffer in most HEIs as the institutions are structured around graduation events and the academic term. The findings concur with previous research findings. Specifically concerning creating time for CE (Adekalu et al., 2018; Wattman et al., 2007), not rendering CE a voluntary activity (Onwumere, 2018), and allowing faculty and students to operate inflexible schedules to enhance practical CE (Wattman et al., 2007). According to Bhatnagar et al. (2020), CE should be part of the curriculum to enable students to develop innovation in addressing challenges in the communities. Goddard and Kempton (2016) also demonstrated the importance of embedding CE in research and teaching to involve all partners in co-production activities.

Participants of the study emphasised the need for contact office and CE structure, revealing a lack of leadership and management for CE. In their research, Brisbin and Hunter (2003) also reported the need for institutionalised contact between the community partners and the institution. They expressed that institutional partners need to be informed about how and what office to contact for CE activities. The findings are also consistent with Hart et al. (2009) and Franz et al. (2012), demonstrating the need for support structures, creating enabling platforms of point of contact for all university stakeholders who may wish to have access to CE information in that institution. Goddard and Kempton (2016), in their study “The civic university,” stated that institutional leadership is critical to the engagement process. They suggested that realising practical CE active institutional leadership to work collaboratively with community partners.

The participants in this study emphasised the need for financial support to execute the CE elements. These results are in agreement with previous studies regarding institutional stakeholders’ needs for CE. Adekalu et al. (2018) conducted a study where participants indicated the need for funds to execute CE elements. Existing literature (Gorski, 2016; Mtawa et al., 2016) observed that inadequate financial support hinders academic staff and students from incorporating CE into their activities. These findings suggest that HEIs should prioritise, allocate resources, and provide rewards to participants in the engagement process (Furco, 2010; Kruss, 2012; Weerts, 2005). A research study (Cho, 2017) also support that institutions should provide incentives and rewards for faculty excelling in CE work.

In addition, participants identified the need for follow-up of the CE activities. Such a need concurs with (Holley and Harris, 2018) findings in their research “The Role of the Research University in City Development.” They found out that community members were frustrated by the lack of follow-up from university researchers. Similarly, an empirical study revealed institutional weakness in following up CE initiatives (Tarus et al., 2017). Consistent with previous research, Brisbin and Hunter (2003) demonstrated how inadequate follow-up, infrequent contacts, and communication with university students and faculty frustrated community stakeholders. Whereas institutions engage communities in various activities, community stakeholders perceive them as academic institutions, engaging communities for information collection purposes. The
empirical findings and literature suggest that HEIs should endeavour
to follow-up their CE activities.

Nevertheless, the findings of this study question MMU’s commitment
to fulfilling the CE mission. For instance, does the institution possess a
clear university community leadership, structure, and a framework for
actualizing CE? Taking this question into account justifies the develop-
ment of a comprehensive strategy and a framework for CE. Creating
strategies implies institutionalization and creating official structures to
support CE. Such a framework would incorporate a “co-creation” model
that embraces knowledge sharing through collaboration and participa-
tion, combining resources and capabilities between institutions and
stakeholders. For instance, in various settings (workshops, classroom,
community setting), students, faculty, and community stakeholders meet
to co-create solutions to rising community challenges. Frank and Sieh
(2018) and Quillinan et al. (2018) suggested that institutions should
emphasise pedagogies of practical philosophical teaching and learning
and support co-creation to benefit all stakeholders. More research sug-
gested (Cook and Nation, 2016; Mbah, 2019) suggested developing clear
frameworks to guide CE initiatives. The absence of an engagement
framework jeopardized building necessary bridges between the HEIs and
the stakeholders. In precise terms, these findings suggest that the insti-
tution must refocus on efforts that facilitate beneficial engagement,
acknowledge and work towards meeting the stakeholders’ needs.

5. Conclusion

While there have been many studies on HEIs’ engagement with stakeholders, few have focused on understanding these stakeholders’ perceptions and needs. Thus, the purpose of this study was to assess HEIs stakeholders’ perceptions and needs for CE from a Ugandan case study. CE is explored against the background of the CoP concept to provide insight into how engaged stakeholders perceive engagement. From the CoP perspective, HEIs offer engagement opportunities and build beneficial relationships with their stakeholders. The current study and literature showed that the three categories of stakeholders positively perceived the engagement BENs. This indicates that HEIs should emphasise mutually beneficial CE by setting up structures that support students, faculty members, and community stakeholders’ engagements. However, the findings showed that the restricted engagement OPPs and CHAs hinder stakeholders’ practical CE. This research suggests that HEIs prioritise and pay more attention to creating OPPs and addressing the CE CHAs.

The findings showed that community-related activities were unsupported, and stakeholders’ needs were not addressed. As a result, the three categories of participants express the need to create time, contact office and structure, financial support, and adequate communication for CE elements. Both findings from the current study and literature yield important suggestions to address these needs. The time constraint can be solved by incorporating CE activities in the institutional timetables, designing CE programs as part of the formal curriculum for students, faculty members, and dairy farmers’ participation in CE programs. Also, HEIs must emphasise reciprocal engagements through co-learning activities. Also, HEIs must develop CE programs based on the needs of their stakeholders. Institutions should support faculty members and make follow-ups of the CE activities. More so, HEIs should ensure adequate follow-up and appropriate information flow to bridge the communication gap amongst their key stakeholders. Moreover, addressing the stake-
holders’ needs relies on the institutional leadership support to set up structures and contact offices for CE. Institutional leadership must pro-
vide the necessary support that allows CE activities to flow in the insti-
tutional structures.

In conclusion, the current study suggests that HEIs should emphasise CoP during the engagement with stakeholders. The CoP is a relevant concept to guide practical CE in HEIs. Through CoP, faculty research and students’ education experiences will be enhanced. Students will be able to collaborate with community stakeholders through different forms of participation. Also, in a CoP, institutions should incorporate a “co-creation,” embrace knowledge sharing, collaboration, and participation, of all stakeholders. We believe that this will enable the development of effective CE interventions that will address stakeholders’ needs. Lastly, this study recommends HEIs pay attention to their stakeholders for meaningful and impactful CE.

However, it is unethical not to mention this study’s limitation to shape
the future for further research. Data analysed and findings presented only
represent the faculty members, students, and dairy farmers (external),
whereas the university has multiple external stakeholders such as fish
farmers. Therefore, future research should include more external stake-
holders at other HEIs, to determine CE perceptions. Lastly, this study was
constraint by time factors to exhaustively investigate how HEIs can
address stakeholders’ needs. Nevertheless, prospects exist for future
studies resulting from it. In this line, participatory research workshops and
CoP can be organized to accommodate different stakeholders in
designing ways to address their CE needs.

Declarations

Author contribution statement

Alice Sheila Nanyanzi: Conceived and designed the experiments; Performed the experiments; Analysed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Chang Zhu, Mugenyi Justus Kintu: Conceived and designed the experi-
ments, Contributed reagents, materials, analysis tools or data.

Joanita Kataike: Performed the experiments, Analysed, and inter-
preted the data.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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