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Academic interaction with social partners in the case from the University of Limpopo

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Abstract

The purpose of this article is to describe the different dimensions of the community- university interactions that emanated from a Community Engagement Audit which was undertaken at the University of Limpopo (UL) in 2014. The Audit methodology followed a quantitative survey research approach. A sample of 278, out of a population of 559 academic staff at UL that included 196 with PhDs and 363 without PhDs, participated in the study. SPSS was used to compute factor analysis. The results indicated the dominant partners that faculties interact with across the spheres of engaged scholarship were multi-national companies, small, medium and micro-enterprises, national regulatory and advisory and sectorial organisations. The types of relationship with external social actors were contract research, continuing education and collaborative research and development projects. Channels of information were popular publications, public conferences, seminars or workshops, oral or written testimony or advice prominent. The outputs were new or improved products/processes, scientific discoveries and community infrastructure and facilities. The outcomes and benefits were regional development, improved quality of life for individuals and communities and research focus and research projects, theoretical and methodological development in an academic field, academic and institutional reputation. The main constrains experienced during engagement are lack of academic resources and institutional support and relationships with external social partners. The results provide guiding parameters to improve the scale and reach of CE at the UL and a snapshot of the architecture and terrain of engaged scholarship at a rural-based HEI in South Africa.

Introduction

This article presents the different dimensions such as the nature of external social partners, types of relationship, the channels, the outcomes and benefit and the challenges and obstacles of the academic-community interactions which were reflected in data that emanated from a Community Engagement (CE) Audit, undertaken from the 11th of November 2013 to the 30th May 2014 at the UL as rural based university. This university as described by

Higher Education Quality Committee (HEQC) (2011, p.8) is a "rural based medium-sized" university situated in the rural enclave of Mankweng Township, Ga-Makanye and Mamotintane villages in the Limpopo Province. Rural-based universities are "historically disadvantaged offspring of the so-called apartheid policy" of "separate development established during the apartheid era in the former homelands" and were "institutionalized through the Extension of University Education Act of 1959" (Mavhandu-Mudzusi and Netshandama, 2014, p.372; Nkomo and Sehoole, 2007, p.2).

Alongside teaching and learning and research, CE is identified as one of the core responsibilities of universities as mandated by the White Paper on Higher Education (1997). Council on Higher Education (CHE, 2004, p.12) defines CE as

> Initiatives and processes through which the expertise of the higher education institution in the areas of teaching and research are applied to address issues relevant to its community. Community engagement typically finds expression in a variety of forms, ranging from informal and relatively unstructured activities to formal and structured academic programmes addressed at particular community needs.

Ramírez, Aitkin, Kora and Richardson, (2005) add that community engagement as continuous process characterised by addressing evolving needs and interests of the community. Both these definitions resonate with the University of Limpopo's CE policy that states CE "continuously negotiated collaborations and partnerships between UL and the interest groups that it interacts with, aimed at building and exchanging knowledge, skills, expertise and resources required to develop and sustain society" (UL CE Policy, 2008, p.8). CE is also included in the mission statement of the University of Limpopo which read "A university which responds actively: To the development needs of its students, its staff members and its communities, through relevant and high quality education and training, research and engagement, and in partnership and in collaboration with its different stakeholders" (UL website, 2016).

Although the HEQC "commends the University of Limpopo for its range of community engagement activities carried out by committed staff members" (HEQC, 2011, pp.35) the nature, types, channels of information, outputs, outcomes and obstacles and challenges of the academic-community interactions that its faculties has with external social partners remain undocumented. It is therefore, important to investigate different dimensions

that emerge out the University of Limpopo's academic-community interactions.

In this article we briefly explore some of the literature that critically examined the origins of community engagement, the context of engagement, a brief history of engagement in South Africa, the perceived benefits of CE to both university and community – and the constraints within the South African CE context, the research methodology used to conduct the study before introducing the results of the Audit.

Origins of community engagement

There is mounting interest in the way in which Higher Education Institutions (HEIs) such as universities confront local, regional and national development needs as echoed in 2009 World Bank higher education policy recommendations (Nampota and Preece, 2012; Schuetze, 2010). Internationally HEIs are responding to fundamental changes that are occurring throughout the world by "transforming their functions, role and purpose in order to respond to new needs and environmental conditions" (Rowe, 2011, p.5). According to Boughey (2014, p.1) in agreement with a "international trend in higher education (Arredondo and De la Garza, 2007; Hall, 2010; Kaburise, 2007; Shah, 2007; Taylor, 2007). South African HEIs over the past decade and a half have to greater or lesser degrees commenced to address the issue of recognising and addressing CE a legitimate concern alongside teaching, leaning and research.

The literature on community engagement suggest two modes of engagement i.e. "a dispersed model" that involves the interaction with external stakeholders of individual staff members "self-initiated projects" (Mulroy (2004 cited by Nampota and Preece, 2012, p.107 and "a coordinated model" that involves the interaction with external stakeholders both staff and students "as teams across and within departments, reflecting the engagement approach" (Nampota and Preece, 2012, p.107).

Almost two decades ago, the current focus on CE within South African higher education was catalysed by the publication of the Education White Paper 3 (Department of Education (DoE), 1997). The White Paper states that higher education in South Africa should undergo a process of transformation in order

to contribute to the post-Apartheid development goals. It is therefore, crucial HEIs in South Africa ". . .continue to serve as a medium of socio-economic change and emancipation by involving surrounding communities in their research projects in order to provide the necessary skills that will help to improve quality of life" (Odeku and Meyer, 2014, p.667).

The national ambition was reinforced by the World Declaration on Higher Education for the Twenty First Century that universities should provide service to society as a contribution to reducing social ills such as "poverty, hunger, intolerance, violence, illiteracy, environmental degradation and diseases" (UNESCO, 1998, p.8). Consequently, South African HEIs gradually began to become aligned to the new mission of responding "to the changes in the demands and needs of society and stakeholders' (Paleari, Donina and Meoli, 2015, p.370) and work collaboratively with their immediate communities to address and contribute to the developmental potentials of both community and university (Nampota, 2011; Pratt, Matthews, Nairne, Hoult and Ashenden, 2011). The UL also recognises this and through its CE Policy.

HEIs have responded to both the national and international (focus) better word may be 'imperative' of the engaged university of the 21st Century in diverse ways, producing a nascent framework for engagement. The drive to develop redundant adjective 'architecture' of engagement that encapsulates 'good' scholarship. . .is premised upon the claim that engaged scholarship is inherently 'good' scholarship – which we address later in the introduction.

The context of engagement

Although community engagement is an integral, mandated aspect of all HEIs (including UL), the Council for Higher Education does not prescribe specific modes of engagement at an institutional level, enabling specific institutional contexts to shape the localised identity and nature of engaged scholarship (CHE, 2006). Policies from different HEIs demonstrate that there are similarities in the modes of structured and unstructured activities and identities of different HEIs (McRae, 2012; Hall, 2010; Westdijk, Koliba and Hamshaw, 2010). Generally, CE in most South African universities (including UL) takes the form of service learning, structured outreach – or volunteerism – and community centred research activities (Snyman, 2014; Nhamo, 2013; Schuetze, 2010; UL CE Policy, 2008). In this respect, it is incumbent on each

institution to formulate their own community engagement mode, often reinforcing the identity of the particular HEI through processes of institutional dialogue and procedures, influenced by the mission and vision of the institution and the context/s in which the engagement occurs (Hester, Adejumo and Frantz, 2015; Muller, 2010). Despite the relevance of these activities, the issue of engaged scholarship which has to be negotiated – if mutually beneficial outcomes are to be sustained – is often contested.

A brief history of engagement in South Africa

Since the ratification of the White Paper, the South African Higher Education system policies and legislation has gradually increased the scope and focus of engaged scholarship. The overall focus of these shifts reflects the ambition of bringing community and universities closer together, underpinned by the belief that such 'closeness' holds potentials to unlock new forms of knowledge (Van Schalkwyck and Erasmus, 2011; Erasmus and Albertyn, 2014).

The drive to produce knowledge that is both relevant at the local scale and can be used by communities has resulted in the development of some core themes that are intended to take the community-university relationship beyond the traditional pedagogy of teaching and learning and conducting research in the pursuit of knowledge that could be used is believed to reside at the dynamic academic-community interface. The central themes include: (i) the transformation of HEIs at an institutional level so that they are better positioned to facilitate, implement and disseminate findings from engaged activities (Snyman, 2014); (ii) the orientation of both academics and community partners to the relevance and utility of engaged scholarship and (iii) the expansion of specific, niche institutional knowledge areas – such as socio-economic development, environmental concerns and the inclusion of indigenous knowledge. In the last two decades these themes have become operationalised through a diverse portfolio of interactive partnerships between communities and universities which has included both formal and informal community engagement practices such as service-leaning, internships, participatory-action-research and volunteerism.

It has been argued – and reported – that the 'glue' that holds these unique partnerships together reflects some, or all of the following characteristics:

knowledge co-generation, horizontal social relations, trust, the sharing of experiences and lessons learnt in a process of community-university praxis from which unique forms of knowledge and 'knowledge enablement' have been produced (Erasmus & Albertyn, 2014). It has been argued from many perspectives that whilst traditional forms of teaching and learning and research add value to many aspects of development, engaged scholarship produces unique benefits as diverse communities intersect with HEIs. By participating in CE activities students achieve professional development, enhanced learning and develop positive impact on their academic learning by bridging the gap between classroom theories to practice (Preece, 2013; Netshandama, Maluleke and Kutame, 2011). HEIs get improved institutional commitment to the curriculum increase their networks, pedagogical skills and research possibilities and recognition in the community (Benneworth, 2015; Preece, 2013; Briscoe, Keller, McClain, Best and Mazza, 2009) while the Community enhance their knowledge to address their own social and economic needs, members gain in terms of self-esteem, trust, skills acquisition, confidence and problem solving skills (Preece, 2013, p.271; Ahmed and Palermo, 2010, p.1380).

The perceived benefits of community engagement

The continuous interaction and mutual beneficial partnership between HEI and their external actors may have yielded outcomes as "the changes, benefits, learning or other effects" as a result of the interaction (Hart, Northmore and Gerhardt, 2010, p.36) and outputs as "the products and services delivered" as a results of the interaction (Cupitt and Ellis, 2007, p.6). These include social and economic outcome and outputs including new or improved products, new or improved processes, scientific discoveries, community infrastructure and facilities and traditional academic outcome and outputs including students, academic papers and conference presentations and reports, policy documents and popular publications (Kruss, Diwu, Nyoka, Ranchod and Manamela, 2013, p.84).

It has been argued that the value contained within the community-university interface includes mutual benefits for academics, their institutions and the communities they engage with as HEIs get improved institutional commitment to the curriculum increase their networks, pedagogical skills and research possibilities and recognition in the community and the community

enhance their knowledge to address their own social and economic needs.(Rowe, 2011; Hart & Northmore, 2010; Mohamed, 2006; Muirhead, Graham and Brown, 2002). Through academic programmes such as internships and service-learning the universities claim they are able to add value to both the community and the university as well as leveraging spaces for students to develop values associated with civil awareness and social responsibility – whilst simultaneously acquiring a stock of 'real-world' experiences that they can apply in both their academic work and future careers (Wood and Zuber-Skerrit, 2013; Kruss, Visser, Aphane and Haupt, 2012; Ahmed and Palermo, 2010; Strydom and Mentz, 2010; Global Alliance on Community Engaged Research, 2009; UNESCO, 2009).

Challenges confronting the community engagement mandate

Practical constraints

The historical positioning of UL and other HEIs in South Africa reflects the apartheid legacy which has resulted in an uneven HEI landscape and subsequently an uneven Community Engagement portfolio across South Africa. Particular constraints that have been highlighted include, inter alia: time constraints to do CE, gaining entry to communities and the negative perceptions of communities about the relevance of universities to marginalised households (Levitt, 2014; Mabuza, Diab, Reid, Ntuli, Flack, Mpofu, Daniels, Adonis, Cakwe, Karuguti and Molefe, 2013; Kruss *et al.*, 2013; Chimucheka, 2012). These 'day to day' constraints tend, however, to be underpinned by a more universal— mosaic of structural and ideological constraints which intersect with the practical constraints outlined above.

Structural constraints

Integrating successful and sustainable community engagement activities within the fabric of UL and other HEIs poses challenges for universities throughout South Africa (Israel, 2014; Wood & Zuber-Skerrit, 2013; UL CE Policy, 2008). Both national and international literature suggests that CE is often situated at the peripheries of the institutional hierarchy of importance. It is argued that the 'second cousin' (Moore and Ward, 2010 as cited by

Kearney, 2015. p.27; Bender, 2008) status sustains uncoordinated, marginalised and inadequately supported – particularly funded – CE portfolios at many HEIs resulting in weak and lack lustre institutional impact (Pienaar, 2014; Erasmus & Albertyn., 2014; Hall, 2010). It has been argued that this is often exacerbated by the lack of clarity about the 'meaning' of CE, rendering evaluation and measurement of the impacts of CE on uncertain ground (Mirza, Vodden, and Collins, 2012; Hall, 2010). This claim that measurement cannot be precise if there is no clarity about what is to be measured (impact, commitment, responsiveness, community involvement, partnerships, types of knowledge generated, utility of the knowledge to different parties) is echoed from many quarters (Nhamo, 2013; Slamat, 2010).

It is not just internal institutional inconsistencies that make CE difficult terrain to navigate. Historically, universities have been perceived as 'ivory towers' that are populated by an elite who reproduce elite, Mode One knowledge (Gibbons, Limoges, Nowotny, Schwartzman, Scott and Trow, 1994) often with little – if any – practical utility to third sector agencies which are the civil society that include large and small non-profit voluntary sectors including non-governmental community based organisations, trusts, social enterprises and cooperatives (Albertyn and Erasmus, 2014; Corry, 2010; Boughey, 2014; Netshandama, 2010; Bender, 2008). The historical inconsistency remains a dominant influence within the broader UL architecture as an institution that compete for national and international recognition and status – which often favours Mode 1 knowledge over other forms of knowledge – through traditional indicators, such as accredited publication outputs and throughput rates (Gerber, 2005, p.1398). This terrain, which CE practitioners are as bound to negotiate as any other academic, often produces unintended obstacles that frustrate institutional and individual efforts to facilitate CE.

It is not just the contemporary positioning of HEIs in the broader, international academic context that influences the impacts and outcomes of CE activities. There are internal structural inconsistencies which also have discrete – yet profound – impacts on the CE landscape. One example of a discrete, structural obstacle is highlighted by Pienaar (2014) and Stillman (2014) who argue that outdated ethics committee protocols – inclusive of implicit epistemological clashes about the validity of different knowledge forms – frustrate the CE ambition.

We suggest that the existing CE panorama in South Africa is an uneven one, influenced by historical, structural and practical challenges – yet despite these challenges a rich, diverse and reflective portfolio of CE activities has been developed within the neighbourhoods of both disadvantaged and advantaged HEIs. This reflects – albeit through a contested process – considerable individual and institutional efforts to embrace the CE ethos, rather than ignore it.

The study was to analyse existing relationships that UL faculties has with external social partners. Specifically this study sought to answer the following research question relating to UL's interaction with its external social actors: What are the different dimensions of the University of Limpopo's academic-community interactions?

Research methodology

A quantitative survey-based research approach using factor analysis was used in conducting the audit to measure and explain different forms of interaction of University of Limpopo academic staff "with a wide range of external social partners" (Kruss, Visser, Aphane, & Haupt, 2012, p.13; Sampson, 2012; Bryman, 2012). The research design was appropriate for obtaining relevant information about the different forms interaction with wide range external social partners of the UL academics. The study population comprised of 559 personnel from the University of Limpopo which included 196 academics with PhDs and 363 without PhDs. A probabilistic simple random technique was used to select a sample of 228 respondents while ensuring that each element of the population had an equal chance of being included in the study (Monette, Sullivan, Dejong, and Hilton, 2014). An additional 50 participants were further randomly selected for replacement purposes bringing the total to 278. The sample satisfied the inclusion criteria that of being full/part-time academic personnel involved in teaching and learning, research and community engagement. Ethical clearance to conduct the study was obtained from the Turfloop Research and Ethics Committee (TREC) of the University of Limpopo. The anonymity, confidentiality and informed consent of individual participants were ensured.

Data were collected using an interviewer-administered survey Instrument adopted with permission from the Individual Academic Interaction Instrument designed by the Human Science Research Council (HSRC) (Kruss *et al*.,

2012). "A rigorous process and steps were followed in the adaptation of the instruments, namely: grounding it in the emergent literature in South Africa, and in comparative literature on university community engagement, triangulated with instruments on civic engagement used in American and British universities, piloted in two universities with projects leaders, deans, senior managers, and other academics then revised it" (Kruss *et al*., 2012, p.16).

The instrument consisted of 2 sections. Section 1 captured the demographic characteristics of the respondents which included the faculty, academic rank and qualifications of the participants. Section 2 consisted of 6 scales in order to investigate the nature, types, channels of information, outputs, outcomes and obstacles and challenges of the academic-community interactions using with a 4 point Likert Scale with following options 1 – Not at all; 2 – Isolated instances; 3 – On a moderate scale and 4 – On a wide scale. The six scales included; the first scale consisted of 29 items and covered identification of the external social partners, the second scale consisted of 22 items and covered the types of interactions, the third scale consisted of 20 items that covered the channels of engagement, the fourth scale consisted of 12 items that covered the types of outputs produced, the fifth scale consisted of 21 items that covered the outcomes and benefits of the engagements and the last scale consisted of 14 items that covered challenges and constraints academic interaction with external social actors (see Appendix 1).

For example, scale 1 asked: To what extent do you interact through your academic work with any of these external social actors? (e.g. local government agencies; National government departments, clinics and health centres, schools, trade unions, national universities, community organisations, small-scale farmers and so forth). The scale 2 asked: To what extent does your academic scholarship involve these types of relationships with external social actors? (e.g. service learning, research consultancy, technology transfer, contract research, student voluntary outreach programmes, collaborative curriculum design and so forth). Scale 3 asked: To what extent have you used each of the following channels of information to transfer your knowledge to external social actors? (e.g. Popular publications, Public conferences, seminars or workshops, Informal information exchange, Oral or written testimony or advice etc.). Scale 4 asked: To what extent has your academic interaction with external social actors had the following outputs? (e.g. New or improved products, New or improved processes, Academic publications, Dissertations etc.). Scale 5 asked: To what extent has your academic

Interaction had the following outcomes or benefits? (e.g. Relevant research focus and research projects, Theoretical and methodological development in an academic field, Academic and institutional reputation, Interventions plans and guidelines, Community-based campaigns etc.). Scale 6 asked: In your experience, how important are the following obstacles and challenges to your academic Interaction with external social actors? (e.g. Legal problems, Lack of mutual knowledge about partners' needs and priorities, Unequal power relations and capabilities in relation to external social partners, Too few academic staff etc.). (See Appendix 1).

Table 1: Dimensions of the community-university interactions

Dimension	No. of items
Identification of the external social partners	29
Types of interactions	22
Channels of engagement	20
Types of outputs produced	12
Outcomes and benefits of the engagements	21
Challenges and constraints of engagement	14

The Statistical Package for Social Science (version 22) was used for data reduction and to produce statistical outputs using factor analysis. Because a scalar questionnaire was used, the responses were therefore, grouped into like segments using a factor analysis to evaluate the inter-relationships among items and cluster them together to find out which items/variables load to particular components (Bartholomew, Steele, Galbraith and Moustaki, 2008; Kaiser, 1974). A factor in factor analysis is a new latent variable which represents many variables. According to Field (2009, p.639), factors with relatively large eigenvalues are retained and those with small are discarded because "the eigenvalue is a measure of the substantive importance of the eigenvector with which it is associated". Field (2009, p. ??) notes that Kaiser (1960) recommended the retention of all factors with an eigenvalue of 1 because "eigenvalues represent the amount of variation explained by a factor and that an eigenvalue of 1 represents a substantial amount of variation". This approach was adopted in this study in which only factors with eigenvalues above 1 were retained.

Results

Results of the reliability tests and KMO and Bartlett's Test of the scales

The KMO is a measure of sampling adequacy and varies between 0 and 1. According to Field (2010, p.647) a value close to 0 indicates "diffusion in the pattern of correlations, hence, factor analysis is likely to be inappropriate"; when the value is close to 1, this shows that there is compactness in the correlations such that factor analysis will "yield distinct and reliable factors". Field (2010) avers that Kaiser (1974) considers values greater than 0.5 as 'barely acceptable'; values between 0.5 and 0.7 as 'mediocre'; values between 0.7 and 0.8 as 'good'; values between 0.8 and 0.9 as 'great' and those above 0.9 as 'superb'.

In this study, the Kaiser-Meyer-Olkin Measure for dimensions 3 (.904) and 5 (.913) were excellent and for dimensions1 (.837), 2 (.883), 4 (.868) and 6 (.862) were all commendable. Therefore, the entire sample for all the scales was satisfactory for factor analysis and significant at level of .000 (Kaiser, 1974).

Dimension one yielded a good Cronbach Alpha value of .896, dimension two yielded an excellent Cronbach Alpha value of .922, dimension three yielded an excellent Cronbach Alpha value of .903, dimension four yielded a good Cronbach Alpha value of .862, dimension five yielded an excellent Cronbach Alpha value of .926, dimension six yielded a good Cronbach Alpha value of .851. The overall reliability test of the questionnaire yielded a Cronbach Alpha value .968 which reflects an excellent internal consistency of the scale (Bonett, and Wright, 2015; Eisinga, Te Grotenhuis, & Pelzer, 2013).

Only group variables with more than one item were reported in this study because factor analysis is about correlations between items. One could consider a single item as an outlier and may warrant removal from the data set because it has low correlations with other items and this can also indicate what Field (2010, p.675) calls a "reverse-phrased item" – that is an item which requires an opposite response to all other questions.

Demographics of research respondents

From the four faculties and Research Administration results, nearly 9% of the participant's preferred to keep their faculties anonymous. The majority of the participants (35%) were from the faculty of Science and Agriculture. In terms

of academic rank nearly 8% preferred to keep their rank anonymous and 38% were senior lecturers. With regard to their qualifications, close to 36% of the participants had PhDs, while nearly 11% preferred to keep their qualifications confidential. (See Table 2).

Table 2: Demographic characteristics of respondents

Variable	Category	Responses	
		Frequency (n)	Percentages (%)
Faculty	Health Sciences	32	13.5
	Humanities	52	21.9
	Science and Agriculture	83	35
	Management and Law	42	17.7
	Research Administration	7	3
	No response	21	8.9
	Total	237	100
Academic rank	Director	2	0.8
	HOD	14	5.9
	Senior Lecturer	91	38.4
	Junior Lecturer	83	35
	Tutor	7	3
	Academic Support Service	19	8
	Non-Academic Support Service	3	1.3
	No response	18	7.6
	Total	237	100
Qualification	Junior Degree	5	2.1
	Honours Degree	34	14.3
	Masters Degree	83	35
	Doctoral Degree	85	35.9
	Post Grade 12 qualifications	5	2.1
	No response	25	10.5
	Total	237	100

Type of external social actors the UL interact with

The Table 3 below shows the results of the Kaiser-Meyer-Olkin (KMO) and Bartlett Tests specifically for dimension one: the external social partners. For this dimension, the KMO value is 0.837 which is considered 'great' and we can conclude that the sample size is adequate for factor analysis. Barrtlett's test of sphericity which yielded a chi-square = 2127.447, p 0.000, indicates that correlations between items were sufficiently large for factor analysis.

Table 3: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.837
Bartlett's Test of Sphericity	Approx. Chi-Square	2127.447
	df	378
	Sig.	0

Table 4 illustrates that the types of external social partners included firms, civil society, academic, government, households and agencies. It is evident that firms accounting for 21.2% of the variance (and an eigenvalue of 5.939) and civil society (with 11.3% of the variance and an eigenvalue of 3.185) are the main type of external social actors the faculties interact with. These six components had Eigenvalues above Kaiser's criterion of 1 and account for a cumulative 61.2% of the total variance while the rest of the variance is accounted for by extraneous factors. The scree plot confirmed these six components. The items that clustered on the component we called 'Civil society' are led by religious organisations which had a high factor loading of 0.811.

In this study, among the social actors were large national firms (with a high factor loading of 0.804, multi-national companies (0.792), Small, medium and micro-enterprises (0.714), national regulatory and advisory agencies (0.591) and sectoral organisations (0.570) which were clustered/loaded onto component/factor which we called 'Firms' (See Table 4 below).

Table 4: Rotated component matrix on the type external social actors the faculties interact with

		Rescaled Component				
	Firms	Civil society	Academic	Govern-ment	House-holds	External agencies
Large national firms	0.804					
Multi-national companies	0.792					
Small, medium and micro-enterprises	0.714					
National regulatory and advisory agencies	0.591					
Sectorial organisations	0.57					
Religious organisations		0.811				
Political organisations		0.692				
Social movements		0.658				
Trade unions		0.566				
Community organisations		519				
African universities			0.764			
International universities			0.731			
Provincial/regional government department or agencies				0.864		
Local government agencies				0.784		
National government departments				0.617		
Individuals and households					0.877	
A specific local community					0.749	
Science councils						0.819
Funding agencies						0.715
Eigenvalues	5.939	3.185	2.526	2.084	1.791	1.616
% Explained variance	21.21	11.37	9.021	7.443	6.397	5.773
Cummulative % of variance	21.21	32.59	41.61	49.05	55.45	61.22

In table 4, loadings of 0.5 and above were considered significant and reported. The extraction method was Principal Component, with orthogonal (varimax) rotation in which Kaiser normalisation was achieved in 6 iterations. (The same applies to tables that follow).

There are 19 items/variables remaining because of the substantive importance of factor loadings in which coefficients less than 0.5 were suppressed in line with Stevens (2002 cited in Fields, 2010) who recommends interpreting only factor loadings with an absolute value greater than 0.4. The rest of the variables were, thus, discarded. As such, in this study, only items with factor loadings of 0.5 and above were reported. Field (2009, p.644) argues that "factor loadings are a gauge of the substantive importance of a given variable to a given factor".

Types of relationship with external social actors

This dimension recorded a KMO coefficient of 0.883, which is also 'great' suggesting the sample size's adequacy for factor analysis. The Bartlett's test of sphericity was also significant at p 0.000 indicating that the data set did not resemble an identity matrix which is composed of zero correlations. The test produced a value of chi square of 1986.912 (See Table 5).

Table 5: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.883
Bartlett's Test of Sphericity	Approx. Chi-Square	1986.912
	df	210
	Sig.	0

Table 6 illustrates that the component matrix has four factors. Notably, the type of relationships with external social actors was mainly concerned with research, education and training and engaged learning. The first factor, Research, explained about 33.4% of the total variance in this dimension with an eigenvalue of 7.013 in which contract and collaborative research as well as technology were prominent in the engagements given their high factor loadings above 0.7. Under the factor of Education and Training, 'Continuing education or professional development' was prominent with a factor of loading of 0.746. These four factors account for 59.98% of the variance in this dimension.

Table 6: Rotated component matrix types of relationship with external social actors

	Rescaled			
	Component			
	Research	Education & Training	Engaged learning	Techno-logical transfer
Contract research	0.788			
Collaborative research and development (R&D) projects	0.779			
Technology transfer	0.721			
Participatory research networks	0.662			
Joint commercialisation of a new produced	0.644			
Research consultancy	0.606			
Community based research project	0.574			
Continuing education or professional development		0.746		
Collaborative curriculum design		0.691		
Monitoring, evanluation and need assessment		0.678		
Customised training and short courses		589		
Policy research, analysis and advice		0.569		
Education of students so that they are socially responsive			0.721	
Service learning			0.712	
Alternative modes of delivery to accommodate non-traditional students			0.672	
Work-integrated learning			0.665	
Student voluntary outreach programmes			0.525	
Clinical services and patient or client care				0.72
Design and testing of new interventions or protocols				0.671
Eigenvalues	7.013	2.312	1.903	1.369
% Explained variance	33.4	11.01	9.963	6.158
Cummulative % of variance	33.4	44.41	53.47	59.985

Channels of information

This dimension recorded a KMO of 0.904 which is deemed to be 'superb' for adequacy of the sample and a Bartlett's test of sphericity which yielded a significant chi-square value of 1647.675 at p 0.000 – with both tests hinting at the appropriateness of factor analysis. (See Table 7).

Table 7: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.904
Bartlett's Test of Sphericity	Approx. Chi-Square	1647.675
	df	171
	Sig.	0

Table 8 illustrates that four components were extracted, namely Technological, Research and Informal Engagements as well as Public Media – which they have used as the stated channels of information to transfer their knowledge to external social actors. For instance, technological engagements account for 35.6% of the variance in this dimension with an eigenvalue of 6.775, while public media with an eigenvalue of 1.385 accounted for about 7.3% of the variance in this dimension. These four factors accounted for about 59% of the variance in this dimension while extraneous factors accounted for the remaining 41% of the variance. Under public media, popular publications (factor loadings of 0.773) and public conferences, seminars and workshops (with 0.724) were prominent.

Table 8: Rotated Component Matrix on Channels of Information

	Rescaled Component			
	Technological engagements	Research engagement	Informal engage-ment	Public media
Spin-off firms from the university (commercial or not for profits)	0.69			
Software development or adaptation for social uses	0.679			
Technological incubators or innovation hubs	0.635			
Patent application and registration	0.633			
Interactive websites	0.626			
Technolgy development and application networks	0.574			
Reports and policy briefings	0.523			
Participatory or action research projects		0.699		
Research contracts and commissions		0.648		
Demonstration projects or units		0.639		
Training and capacity development or workshops		0.602		
Cross-disciplinary networks with social partners		0.598		
Intervention and development programmes		0.571		
Informal information exchange			0.755	
Oral or written testimony or advice			0.748	
Students			0.6	
Popular publications				0.773
Public conferences, seminars or workshops				0.724
Eigenvalues	6.765	1.696	1.399	1.385
% Explained variance	35.61	8.929	7.362	7.288
Cummulative % of variance	35.61	44.54	51.9	59.185

Outputs from engagement

This dimension recorded a KMO of 0.868 which is deemed to be 'great' for adequacy of the sample and a Bartlett's test of sphericity which yielded a significant chi-square value of 1112.387 at p 0.000 – with both tests hinting at the appropriateness of factor analysis (See Table 9).

Table 9: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.868
Bartlett's Test of Sphericity	Approx. Chi-Square	1112.387
	df	55
	Sig.	0

Table 10 illustrates that the outputs that resulted from academic interaction with external social actors were of an academic, and social and economic nature as the only two factors which were extracted. The items which clustered under the social and economic factor were new or improved products/processes, scientific discoveries and community infrastructure and facilities with factor loadings above 0.7.

Table 10: Rotated Component Matrix on outputs

	Rescaled Component	
	Social & economic	Traditional academic
New or improved products	0.875	
New or improved processes	0.803	
Scientifc discoveries	0.719	
Community infrastructure and facilities	0.707	
Snip-off companies	0.664	
Cultural artifacts	0.539	
Academic publications		0.841
Dissertations		0.841
Reports, policty documents and popular publications		0.733
Academic collaboration		0.704
Graduates with relevant skill and values		0.657
Eigenvalues	3.684	2.95
% Explained variance	33.487	26.814
Cummulative % of variance	33.487	60.301

The results indicate that the social and economic factor had an eigenvalue of 3.684 and accounted for about a third (33%) of the variance in this dimension. The two factors accounted for two thirds of the variance in this dimension.

Outcomes and benefits of engagement

This dimension posted a 'superb' KMO value of 0.913 and a Bartlett's test of sphericity chi square of 2452.745 (190) significant at p 0.000. These results also attest to the appropriateness of using factor analysis in terms of sample adequacy and sphericity (See Table 11 below).

Table 11: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.913
Bartlett's Test of Sphericity	Approx. Chi-Square	2452.745
	df	190
	Sig.	0

Table 12 illustrates that the outcomes and benefits that resulted from their engagement with external social partners were mainly social development and academic. Eight items clustered around the Social Development factor which had an eigenvalue of 8.704 and accounted for about 44% of the variance in the outcomes and benefits dimension. These items range from regional development to incorporation of indigenous knowledge. Under Engagement clustered items such as Intervention plans and guidelines as well as policy interventions.

Table 12: Rotated Component Matrix on outcomes and benefits

	Rescaled Component		
	Social Development	Academic benefit	Engagement
Regional development	0.793		
Improved quality of life for individuals and communities	0.781		
Improved livelihoods for individuals and communities	0.761		
Community empowerment and agency	0.719		
Community employment generation	0.645		
Firm employment generation	0.628		
Firm productivity and competitiveness	0.598		
Incorporation of indigenous knowledge	0.559		
Relevant research focus and research projects		0.793	
Theoretical & methodological development in an academic field		0.79	
Academic and institutional reputation		0.779	
Participatory curriculum development, new academic programmes and materials		0.675	
Cross-disciplinary knowledge production to deal with multi-faceted social problems		0.633	
Interventions plans and guidelines			0.711
Community-based campaigns			0.707
Community training and skills development			0.675
Policy interventions			0.657
Public awareness and advocacy			
Eigenvalues	8.704	2.474	1.935
% Explained variance	43.521	12.372	9.676
Cummulative % of variance	43.521	55.893	65.569

Obstacles and challenges to engagement

The KMO test for this dimension produced a value of 0.862 which is considered 'great'. The Bartlett's test of sphericity also recorded a chi square value of 928.680 which is significant at p 0.000 (see Table 13 below).

Table 13: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.862
Bartlett's Test of Sphericity	Approx. Chi-Square	928.68
	df	78
	Sig.	0

Table 14 illustrates that the main obstacles and challenges experienced during engagement are lack of academic resources and institutional support and relationships with external social partners. Four items clustered under the factor which we termed Relationship. This factor with an eigenvalue of 4.111 accounted for about 32% of the variance in this dimension. Three items clustered under the Institutional factor. The three factors account for about 59% of the total variance in this dimension.

Table 14: Rotated Component Matrix on obstacles and challenges

	Rescaled Component		
	Relationship	Academic resource	Institutional
Legal problems	0.785		
Lack of mutual knowledge about partners' needs and priorities	0.759		
Unequal power relations and capabilities in relation to external social partners	0.73		
Negotiating access and establishing a dialogue with external social partners	0.709		
Too few academic staff		0.718	
Competing priorities on time		0.603	
Limited financial resurces for competing university priorities		0.595	
Instutional recognition systems do not reward academic interaction activity sufficiently		0.547	
Risk of students involvement in interaction with external social partners			0.681
Lack of clear university policty and structures to promote interaction			0.67
University administration and bureaucracy does support academic interaction with external social patterns			0.58
Eigenvalues	4.111	1.826	1.731
% Explained variance	31.624	14.048	13.317
Cummulative % of variance	31.624	45.672	58.989

Discussion

Modes of engagement

It was observed that for the University of Limpopo, the interaction with external partners and faculties are primarily with firms and communities which had high factor loadings. These findings concur with Kruss *et al*. (2012, p.31) who found communities and firms as the "most frequent partners . . . reported by academics in South African universities". The engagement with large firms, multinational enterprises and Small, Medium and Micro-sized Enterprises (SMMEs), highlights the importance of university-industry linkages. The link to community could be surmised to reflect both the rural nature of the university as well as the relevance of community engagement which is developmental in orientation.

Regarding the types of relationships with external social actors, the most prominent variables which loaded to this factor were contract and collaborative research, technology transfer and participatory research networks. Typically such activities are bi-directional and mutually beneficial representing examples of genuine community-university interactions.

Channels of information

With respect to channels of information, software development or adaptation for social uses; technology and innovation hubs as well as patent application were important in the case of UL. These channels of information are direct, formal and arguably knowledge intensive. This opens new opportunities for re-imagining and re-thinking new forms of community-university interactions that are related to technological innovation. In contrast, Kruss *et al*. (2012, p.54) found that "channels of information for rural based universities included welfare and civil society".

Outputs resulting from interaction

The outputs resulting from academic interaction with social actors were of a traditional academic, social and economic nature. Likewise, Kruss *et al*. (2012, p.45) also found that "academic and social economic outputs are the

two main factors." This indicates that community engagement provided a feasible platform for knowledge exchange between the university and the community which augurs well for mutual capacity development by enabling the university and the community to further embed conventional knowledge/ development exchanges but does suggest that there is room for more innovative forms of engaged scholarship that fit the challenges of the 21st century (National Planning Commission, 2013).

Benefits from the interactions

Outcomes and benefits which result from community engagement with external social partners represent the purpose of these engagements. The benefits include regional development; improved quality of life for communities; firm productivity and competitiveness; incorporation of indigenous knowledge as well as cross disciplinary knowledge production. This corresponds with findings of, Wood, and Zuber-Skerrit, (2013) and Thomson, Smith-Tolken, Naidoo, and Bringle (2011). This suggests that community engagement presents opportunities to produce new and creative responses to societal problems through the enhancement of livelihoods.

Constraints to interactions

In this case, the key obstacles and challenges experienced during engagement with external social partners were a lack of academic resources and institutional support. The lack of resources and institutional support suggests that from an institutional perspective, CE is not reaching its full potential because the energy to promote CE; the student/academic benefits – as well as community benefits – are tied to the motivations of individuals, or departments. This corresponds with the findings of Holzer, and Kass (2015), Chimucheka, 2012, Thomson *et al.* (2011) and Cyril, Smith, Possamai-Inesedy and Renzaho, 2015 who also point towards a lack of resources and institutional support for CE at most HEIs in South Africa

On the one hand, the reality that many universities face the challenge of identifying sustainable support for CE emphasises the disorienting space that many have argued engaged interactions are situated, within the broader CE landscape. On the other hand, that argument masks the uneven territory that

all HEIs negotiate. It is unquestionably the case that some universities are able to commit funds and support to CE by virtue of either their size or their historical advantages and others do not have that luxury.

Given that there appears to be a national consensus that the community-university knowledge interface does add value (DoE , 1997), there is a logical argument for considering a national re-orientation towards engaged activities for specific universities that claim to be 'disadvantaged' or could simply 'do better' if the resources were available (Selvaratnam, 2013). One avenue could be to identify mechanisms to undertake baseline situational analyses of CE at these institutions and reward innovative ideas to radically improve – in accountable, measurable ways – CE at multiple spheres of institutional activity. Such a shift in orientation from HEIs 'expecting resources', to HEIs demonstrating commitment to coherent and responsive CE in genuine dialogue with appropriate partners might radically alter the CE landscape in favour of institutions that do possess both the institutional will and spirit to rigorously engage.

Conclusion

The article has described the different dimensions of the academic-community interactions of the University of Limpopo that emerged from a recent Audit. The study set out to answer the following research question: What are the different dimensions of the University of Limpopo's academic-community interactions?

The results suggest that although CE is not fully institutionalised at UL, committed academics have close relationships with external social partners that include heterogeneous partnerships amongst civil society and the third sector. The main reported obstacles and challenges experienced during engagement included a lack of resources and intuitional support and a network to identify external social partners. In this regard, the results provide guiding parameters to improve the scale and reach of CE at the University of Limpopo and a snapshot of the architecture and terrain of engaged scholarship at a rural-based HEI in South Africa.

The study only used a quantitative survey-based research approach with structured questionnaire. It is suggested that further qualitative research

should be undertaken to capture and explore the in-depth other factors associated with different dimensions of the academic-community interactions of the University of Limpopo.

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Appendix 1: UL Community Engagement Audit 2013/2014

Name of Faculty: _____

Academic rank: _____

Highest qualification: _____

1. **To what extent do you interact through your academic work with any of these external social actors?**

External social actors		Not at all	Isolated instances	On a moderate scale	On a wide scale
		1	2	3	4
1	Local government agencies	☐	☐	☐	☐
2	Provincial/regional government departments or agencies	☐	☐	☐	☐
3	National government departments	☐	☐	☐	☐
4	Clinics and health centres	☐	☐	☐	☐
5	Schools	☐	☐	☐	☐
6	National regulatory and advisory agencies	☐	☐	☐	☐
7	Individuals and households	☐	☐	☐	☐
8	A specific local community	☐	☐	☐	☐
9	Welfare agencies	☐	☐	☐	☐
10	Non-governmental agencies (NGOs)	☐	☐	☐	☐
11	Development agencies	☐	☐	☐	☐
12	Trade unions	☐	☐	☐	☐
13	Civic associations	☐	☐	☐	☐
14	Community organisations	☐	☐	☐	☐
15	Social movements	☐	☐	☐	☐
16	Political organisations	☐	☐	☐	☐
17	Religious organisations	☐	☐	☐	☐
18	Large national firms	☐	☐	☐	☐
19	Small, medium and micro enterprises	☐	☐	☐	☐
20	Multi-national companies	☐	☐	☐	☐
21	Small-scale farmers (non-commercial)	☐	☐	☐	☐

22	Commercial farmers	☐	☐	☐	☐
23	Sectoral organisations	☐	☐	☐	☐
24	National universities	☐	☐	☐	☐
25	African universities	☐	☐	☐	☐
26	International universities	☐	☐	☐	☐
27	Science councils	☐	☐	☐	☐
28	Funding agencies	☐	☐	☐	☐
29a	Other	☐	☐	☐	☐
29b	Specify				

2. To what extent does your academic scholarship involve these types of relationship with external social actors?

	Types of relationship	**Not at all**	**Isolated instances**	**On a moderate scale**	**On a wide scale**
		1	**2**	**3**	**4**
1	Alternative modes of delivery to accommodate non-traditional students	☐	☐	☐	☐
2	Work integrated learning	☐	☐	☐	☐
3	Education of students so that they are socially responsive	☐	☐	☐	☐
4	Service learning	☐	☐	☐	☐
5	Student voluntary outreach programmes	☐	☐	☐	☐
6	Collaborative curriculum design	☐	☐	☐	☐
7	Continuing education or professional development	☐	☐	☐	☐
8	Customised training and short courses	☐	☐	☐	☐
9	Policy research, analysis and advice	☐	☐	☐	☐
10	Expert testimony	☐	☐	☐	☐
11	Clinical services and patient or client care	☐	☐	☐	☐
12	Design and testing of new interventions or protocols	☐	☐	☐	☐
13	Design, prototyping and testing of new technologies	☐	☐	☐	☐

14	Monitoring, evaluation and needs assessment	☐	☐	☐	☐
15	Research consultancy	☐	☐	☐	☐
16	Technology transfer	☐	☐	☐	☐
17	Contract research	☐	☐	☐	☐
18	Collaborative Research & Development (R&D) projects	☐	☐	☐	☐
19	Community-based research projects	☐	☐	☐	☐
20	Participatory research networks	☐	☐	☐	☐
21	Joint commercialisation of a new product	☐	☐	☐	☐
22a	Other	☐	☐	☐	☐
23b	Specify				

3. To what extent have you used each of the following channels of information to transfer your knowledge to external social actors?

Channels of information		Not at all	Isolated instances	On a moderate scale	On a wide scale
		1	2	3	4
1	Public conferences, seminars or workshops	☐	☐	☐	☐
2	Informal information exchange	☐	☐	☐	☐
3	Radio, television or newspapers	☐	☐	☐	☐
4	Popular publications	☐	☐	☐	☐
5	Interactive websites	☐	☐	☐	☐
6	Students	☐	☐	☐	☐
7	Reports and policy briefings	☐	☐	☐	☐
8	Oral or writen testimony or advice	☐	☐	☐	☐
9	Training and capacity development or workshops	☐	☐	☐	☐
10	Demonstration projects or units	☐	☐	☐	☐
11	Research contracts and commissions	☐	☐	☐	☐
12	Technology incubators or innovation hubs	☐	☐	☐	☐
13	Intervention and development programmes	☐	☐	☐	☐
14	Software development or adaptation for social uses	☐	☐	☐	☐

15	Participatory or action research projects	☐	☐	☐	☐
16	Cross-disciplinary networks with social partners	☐	☐	☐	☐
17	Technology development and application networks	☐	☐	☐	☐
18	Patent applications and registration	☐	☐	☐	☐
19	Spin-off firms from the university (commercial or not for profit)	☐	☐	☐	☐
20a	Other	☐	☐	☐	☐
20b	Specify				

4. To what extent has your academic Interaction with external social actors had the following outputs?

Outputs		Not at all	Isolated instances	On a moderate scale	On a wide scale
		1	2	3	4
1	Graduates with relevant skills and values	☐	☐	☐	☐
2	Academic publications	☐	☐	☐	☐
3	Dissertations	☐	☐	☐	☐
4	Reports, policy documents and popular publications	☐	☐	☐	☐
5	Cultural artifacts	☐	☐	☐	☐
6	Academic collaboration	☐	☐	☐	☐
7	Spin-off companies	☐	☐	☐	☐
8	Community infrastructure and facilities	☐	☐	☐	☐
9	New or improved products	☐	☐	☐	☐
10	New or improved processes	☐	☐	☐	☐
11	Scientific discoveries	☐	☐	☐	☐
12	Other	☐	☐	☐	☐
13	Specify				

5. To what extent has your academic Interaction had the following outcomes or benefits?

Outcomes and benefits	Not at all	Isolated instances	On a moderate scale	On a wide scale
	1	2	3	4
1. Public awareness and advocacy	☐	☐	☐	☐
2 Imroved teaching and learning	☐	☐	☐	☐
3 Community-based campaigns	☐	☐	☐	☐
4 Policy interventions	☐	☐	☐	☐
5 Intervention plans and guidelines	☐	☐	☐	☐
6 Community training and skills development	☐	☐	☐	☐
7 Community employment generaion	☐	☐	☐	☐
8 Firm employment generation	☐	☐	☐	☐
9 Firm productivity and competitiveness	☐	☐	☐	☐
10 Novel uses of technology	☐	☐	☐	☐
11 Improved livelihoods for individuals and communities	☐	☐	☐	☐
12 Improved quality of life for individuals and communities	☐	☐	☐	☐
13 Regional development	☐	☐	☐	☐
14 Community empowerment and agency	☐	☐	☐	☐
15 Incorporation of indigenous knowledge	☐	☐	☐	☐
16 Participatory curriculum development, new academic programmes and materials	☐	☐	☐	☐
17 Relevant research focus and new research projects	☐	☐	☐	☐
18 Academic and institutional reputation	☐	☐	☐	☐
19 Theoretical and methodological development in an academic field	☐	☐	☐	☐
20 Cross-disciplinary knowledge production to deal with multi-faceted social problems	☐	☐	☐	☐
21a Other	☐	☐	☐	☐
21b Specify				

6. In your experience, how important are the following obstacles and challenges to your academic Interaction with external social actors?

	Obstacles and challenges	Not important	Slightly important	Moderately important	Very important
		1	2	3	4
1.	Limited financial resources for competing university priorities	☐	☐	☐	☐
2.	Lack of clear university policy and structures to promote Interaction	☐	☐	☐	☐
3	University administration and bureaucracy does not support academic Interaction with external social partners	☐	☐	☐	☐
4	Competing priorities on time	☐	☐	☐	☐
5	Too few academic staff	☐	☐	☐	☐
6	Institutional recognition systems do not reward academic Interaction activities sufficiently	☐	☐	☐	☐
7	Risks of student involvement in Interaction with external social partners	☐	☐	☐	☐
8	Tensions between traditional and new academic paradigms and methodologies	☐	☐	☐	☐
9	Sustainable external funding	☐	☐	☐	☐
10	Negotiating access and establishing a dialogue with external social partners	☐	☐	☐	☐
11	Unequal power relations and capabilities in relation to external social partners	☐	☐	☐	☐
12	Legal problems	☐	☐	☐	☐
13	Lack of mutual knowledge about partners' needs and priorities	☐	☐	☐	☐
14a	Other	☐	☐	☐	☐
14b	Specify				

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