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Abstract

Purpose – This study aims to review the zeal exhibited by universities in South Africa towards aligning institutional mandates of teaching, learning, research and community engagement to the sustainable development (SD) agenda. The implementation of the SD agenda across higher education institutions (HEIs) continues to draw attention from the wider society. This is because HEIs are increasingly being looked up to for leadership in this regard. However, although several studies are quick to identify various factors which have driven the adoption of sustainable practices in HEIs, the paucity of studies seeking to identify the drivers for SD implementation remains glaring. This is particularly so in developing countries like South Africa.

Design/methodology/approach – To confirm the exploratory data from desktop study on public university engagement with sustainability in South Africa, a single case study was conducted in the Central University of Technology (CUT). The single case study design adopted semi-structured interviews and document reviews as data collection techniques. Purposive snowballing sampling technique was strictly adhered to in the selection of interviewees. Interviewees were selected on the basis of their roles in the implementation of the CUT's sustainability agenda.

Findings – Data emanating from these interviews were analysed thematically using qualitative content analysis. Although a plethora of drivers were identified, there appeared to be a consensus between most of the interviewees that the quest for cost reduction remained the most significant driver for the viable implementation of the sustainability agenda at CUT.

Research limitations/implications – It is expected that findings from this study would provide a platform for the development of effective implementation strategies in South African HEIs. Also, the findings contribute to filing the extant gap observed concerning implementation and drivers for engendering SD implementation in HEIs in sub-Saharan Africa (SSA) region.

Practical implications – By highlighting the drivers for SD implementation, this study contributes to the development of a more receptive social ontology among various stakeholders in an HEI towards the agenda, particularly within the SSA context where there is low level of awareness and buy-in by these stakeholders.

Originality/value – This study makes an original contribution to the research base of SD in HEIs and implementation.

Keywords Strategy implementation, Sustainable development, South Africa, Higher education institutions, Drivers

Paper type Research paper

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Introduction

The South African higher education institutions (HEIs) community has signalled its desire to support the national government's sustainable development (SD) aspirations through their core activities of teaching and learning, research and operations. Accordingly, a

noticeable increase in the rates of adoption of SD-centred strategies amongst these HEIs has been observed. Although some of these strategies have been enunciated at the strategic level in many South African HEIs in the form of policy documents, vision and mission statements, not a lot has been reported on their implementation. However, it is pertinent to add that some HEIs have articulated holistic SD implementation frameworks for achieving their SD objectives within the South African context. The Central University of Technology (CUT) situated in South Africa's Free State province happens to be one of such HEIs. This study shall seek to confine itself to the identification of the drivers which have resulted in this HEI's development of an SD implementation framework. It is expected that the identification of these drivers would contribute to strengthening the discourse on the implementation of SD within South African HEIs and stimulate interest in the development of similar implementation frameworks by peer institutions in South Africa. It must also be stated that an assessment of the implementation framework at the CUT is beyond the scope of this study and as such would not be considered, as it has already been done elsewhere (Awuzie and Emuze, 2015).

The South African HEI community has signalled its desire to support the national government's SD aspirations through their core activities of teaching and learning, research and operations. Accordingly, a noticeable increase in the rates of adoption of SD-centred strategies amongst these HEIs has been observed. Although some of these strategies have been enunciated at the strategic level in many South African HEIs in the form of policy documents, vision and mission statements, not a lot has been reported on their implementation. However, it is pertinent to add that some HEIs have articulated holistic SD implementation frameworks for achieving their SD objectives within the South African context. The CUT situated in South Africa's Free State province happens to be one of such HEIs. This study shall seek to confine itself to the identification of the drivers which have resulted in this HEI's development of an SD implementation framework. It is expected that the identification of these drivers would contribute to strengthening the discourse on the implementation of SD within South African HEIs and stimulate interest in the development of similar implementation frameworks by peer institutions in South Africa. It must also be stated that an assessment of the implementation framework at the CUT is beyond the scope of this study and as such would not be considered, as it has already been done elsewhere (Awuzie and Emuze, 2015).

To achieve its objective, the rest of this study will be presented in the following manner: a review of extant literature focusing on SD in HEIs; a review of SD implementation at the CUT; a review of strategy implementation literature, especially as it concerns drivers; an adumbration of the research methodology utilized; a presentation and subsequent discussion of the study's findings; and the conclusion.

Sustainability in South African higher education

SD has been described as the need to ensure that the ethos of sustainability is mainstreamed into various societal developmental activities in such a manner that a societal transformation is achieved (Fernández-Sánchez and Rodríguez-López, 2010). SD and sustainability ethos have come to take centre stage in developmental agendas across the globe. A reflection of the prevalence of the sustainability/SD theme in contemporary literature is buttressed by the findings from a systematic review of literature conducted by Bettencourt and Kaur (2011). Till date, various symposia across the world have been convened with the salient objective of increasing awareness levels and understanding required to drive SD. Such symposia have become more prevalent in the aftermath of the 'Our Common Futures' report by the Bruntland Commission (WCED, 1987).

However, resistance to the society's bid to achieve adopt and successfully implement SD still persists. This resistance has been mostly blamed on attitudinal problems. Individuals and organizations alike continue to express attitudes that are antithetical to the attainment of the SD agenda. This portends a negative impact on SD attainment if left unchecked. This is where HEIs become very essential. Although several economic and governmental actors have made appreciable impact in providing leadership for the transformation towards SD, much more is expected from academic institutions, particularly HEIs, in championing this societal transformation towards SD (Cortese, 2003; Krizek *et al.*, 2012; Lozano *et al.*, 2013). Accordingly, most HEIs have reportedly aligned their SD transformation aspirations to the areas of national priority (UNISA, 2011). This is indeed novel, as SD, considering its far-reaching applicability, will be better served through the identification of such areas of priority and intervening therein, at various intervals during a nation's transformative development. This is the case in South Africa.

No doubt, South Africa occupies a prime position among sub-Saharan Africa (SSA) countries in terms of SD adoption. In apparent recognition of the nation's SD aspiration, the country hosted the Johannesburg Earth summit in 2002 which had SD as its central theme. To buttress its aspiration, several legislations have been promulgated since 1998 to give verve to the country's SD aspirations. Examples of such legislations include The National Environmental Management Act (Act. No. 107) 1998 (RSA, 1998); the Mineral and Petroleum Resources Development Act (Act No. 28) 2002; the Occupational Health and Safety Act (Act. No.85 of 1993); the National Water Act (Act No. 36 of 1998); the Broad-Based Black Economic Empowerment Code of Good practice (2007) (UNISA, 2011); and the National Development Plan, 2030 (NPC, 2012). These legislations are majorly concerned with bridging the levels of inequality experienced within the country as well as protecting the environment. However, it would be observed that these legislations and several others whilst being pro-SD in nature did not constitute a workable systemic route map to the attainment of South Africa's SD aspirations. To resolve this perceived imbroglio, the National Framework for Sustainable Development was developed in 2008 to provide an outline for country's SD vision as well as to proffer interventions required for guiding its developmental path towards a more sustainable pathway. Also, the National Strategy on Sustainable Development has also been introduced as a strategy document to guide the attainment of the SD vision (UNISA, 2011).

The South African higher education sector is making contributions towards achieving the national SD objectives. This has led to the clamour for the modification of extant teaching and learning curricula as well as research activities to reflect the national strategic SD objectives. As such, SD has come to represent the medium upon which the introduction of educational transformation and innovativeness is premised. Instruments such as the National Plan on Higher Education, the Higher Education Act (Act 101 of 1997) and the Education White Paper 3 serve to provide direction on how SD ethos can be successfully mainstreamed into all facets of the HEI activities. These policies culminated in the ten-year innovation plan rolled out by the South African Government for the development of an effective system for engendering innovative practices within HE.

From an international perspective, the University of South Africa (UNISA) became the first HEI in the country to sign onto the United Nations Global Compact charter in 2007 (UNISA, 2011). By becoming a signatory to this charter, the HEI became obligated to reporting on its SD achievements according to internationally acceptable standards annually. Several HEIs in South Africa have since followed suit. Whilst it is not discernible if the CUT is a signatory to this charter, the HEI has since aligned itself to the national strategic SD objectives.

Implementation of sustainability at Central University of Technology

Influenced by the Higher Education Policy in South Africa, which is aligned with national strategic commitments to SD, CUT proceeded to declare its aspiration to contribute significantly to achieving SD commitments (CUT, 2012). Accordingly, CUT in 2010/2011 embarked upon a transformational journey towards assuming a sustainable university of technology (SUoT) status. This transformation was built around the following context specific features, namely, its place as a South African public institution and its nature as a university of technology (UoT). The former makes it imperative for CUT to adopt and support the national commitments and development aspirations of the government and citizenry of the South African nation, especially as it concerns making contributions in science, technology transfer and education. The latter is concerned with the UoT's institutional context.

CUT's resolve in achieving an SUoT status is discernible, particularly given its development of a sustainability implementation framework. Also, the HEI has inaugurated a Sustainable Development Working Group with a mandate to monitor and co-ordinate the various SD projects. These gestures signal its move from strategy adoption and articulation to actual implementation. Obviously, it is one of the few HEIs within South Africa that has developed such an implementation framework. It is the intention of this study to identify the motivating factors (drivers) behind the HEI's resolve to embark upon SD implementation. It is believed that an identification of these drivers will promote the development of a social ontology among various stakeholders to the implementation exercise and thus enable a positive attitudinal change amongst them.

The challenge of sustainable development strategy implementation

Policies and strategies continue to fail because of poor implementation performance (Mulgan, 2009). Yet, the implementation of strategy has continued to elicit less research attention (Noble, 1999; Li *et al.*, 2010). Whilst admitting to the absence of a widely accepted definition for the term "strategy implementation", Li *et al.* (2010) identify three conceptions of the term. These conceptions consist of the process, behavioural and hybrid (mixture of the process and behavioural) perspectives. As a process, implementation is considered as a set of planned phases which are sequentially linked to each other. While the behavioural perspective views implementation as a set of determined actions which result from extant behavioural patterns, the hybrid perspective comprises of a juxtaposition of the process and behavioural perspectives (Li *et al.*, 2010). Arguably, the implementation of the SD agenda in an HEI can be classified according to the hybrid category. It involves a set of sequentially planned and linked phases whose performance is impacted upon by the behavioural patterns of participants. Li *et al.* (2010) allude to the tendency of contemporary researchers to view the strategy implementation phenomenon from one of these perspectives. A paucity of studies seeking to explore SD implementation drivers in HEIs has been observed. Till date, there appears to be overt concentration by scholars on SD adoption in HEIs. Such studies concern themselves with the identification of barriers and drivers associated with SD adoption in HEIs. However, adoption is considered as being intrinsically different from implementation. Although adoption can be regarded as the act of accepting or starting to use something new or different, implementation is considered as the act of putting a plan into action. As such, a mere adoption of a strategy does not imply its implementation (Grindsted, 2011). This is the case in the instance of HEIs' approach to SD.

Various studies have sought to explore the drivers of implementation in areas such as implementation of enterprise resource planning in supply chains (Ram *et al.*, 2014; Koh *et al.*, 2011); green IT (Mann *et al.*, 2009); green supply chain management (Diabat and Govindan,

2011); and the implementation of environmental strategies in manufacturing companies (Bey *et al.*, 2013). Yet, to the authors' knowledge, there are little or no studies which have set out to explicitly identify the drivers influencing SD implementation in HEIs. But implementation poses a significant challenge to the SD aspirations of many HEIs, particularly in SSA. This much is corroborated by Lozano *et al.* (2013) and Grindsted (2011). Whilst observing that more than 1400 HEIs have signed up to more than 31 Sustainable Development declarations since 1990, Grindsted (2011) reiterates that such adoption does not translate to implementation. He attributes the lukewarm attitude to SD implementation in HEIs to the lack of incentive structures within the institutions. Therefore, an identification of the drivers which have propelled HEIs like CUT to commence implementation becomes imperative.

Implementation drivers have been classified according to different perspectives. For instance, Trowbridge (2006) and Walker *et al.* (2008) in their study on implementation of green supply chain management distinguish between internal and external implementation drivers. According to him, internal drivers refer to drivers domiciled within the organization or the supply chain such as organizational factors and willingness to improve risk management whereas external drivers concern those drivers that result from the business environment like investors' demands and regulation. Conversely, Bey *et al.* (2013) in their analysis of drivers for eco-implementation classify drivers according to drivers for initiating and for sustaining eco-implementation. According to them, whilst a given set of drivers is required to initiate implementation, another set of drivers is needed for sustaining the implementation process. The initiating drivers' category consists of drivers such as pressure from stakeholders, whereas the need for gaining competitive advantage is classified as a sustaining driver (Bey *et al.*, 2013). Contributing, Koh *et al.* (2011) opine that stakeholders possess different perceptions concerning implementation drivers. This variance results from factors like the positions and roles of these stakeholders within the implementation. In the case of an HEI, it is expected that members of the student community and the management will have contrasting ideas as it pertains to what constitutes an SD implementation driver (Leal Filho, 2009).

Research methodology

This study adopts a qualitative case study research design. The choice of this research design is predicated on its utility for the conduct of in-depth investigations into phenomena in its particular context (Yin, 2013). In this case, a single case study research design was adopted. Quite understandably, the use of the single case study research design has attracted severe criticism from several quarters, especially as it concerns the generalizability of the accruing findings (Eisenhardt and Graebner, 2007). However, its use in this study enjoys the support of scholars like Yin (2013) and Jefferies *et al.* (2002) who reiterate that the single case study approach is useful when conducting exploratory studies. Furthermore, the case study's reputation for enabling the application of a vast range of data collection techniques was considered. Consequently, a mixture of semi-structured interviews and document review was carried out between June 2015 and May 2016. As a data elicitation technique, semi-structured interviews have proven suitable for situations where the researcher is seeking to unravel the interviewees' worldviews as it pertains to a phenomenon. It provides researchers with the desired flexibility to arrange their questions in a manner that will elicit credible responses from the interviewees. The use of the interview protocol afforded the interviewer with some degree of consistency relating to the questions posed to different interviewees. It should be noted that semi-structured interview sessions avail the interviewer with the opportunity to pose similar questions to different

interviewees, taking into consideration, their individual peculiarities unlike the case in structured interviews where the questions posed are identical and without consideration of individual peculiarities (Guest *et al.*, 2006).

Participants to the study were selected through a mixture of purposive and snowballing sampling techniques (Denscombe, 2010). Interviewees were selected based on their roles in CUT's SD implementation framework. Categories of stakeholders approached for this study include the following: academic staff, management personnel, support staff, members of the student population, research manager, representatives of the various contractors and consultants. Participant recruitment proved a daunting challenge. Fifty-seven potential participants were initially identified by the researcher and emails were sent to them, inviting them to participate in the study. The content of the emails was both specific and detailed. However, a significant proportion of the potential participants did not respond to invitation emails sent out to them over a period of five weeks. This was despite their presence on the HEIs premises. After this five-week hiatus, the researchers had only received six responses indicating willingness to participate in the study. Upon commencement of the interview sessions, the researchers made face-to-face contact with some of the previously identified and invited participants who had not yet replied to the invitation emails. Some progress was recorded in this endeavour as five individuals confirmed their willingness to participate. Furthermore, some of the interviewees were implored to act as gatekeepers. In acceding to this request, they referred the interviewers to other prospective interviewees (snowballing). To an extent, this proved successful. At the last count, 26 interviewees participated in the study. A comprehensive interviewee demographic is presented in Table I.

CUT's SD report as well as the implementation framework document was critically reviewed and the data emanating from them were used to compliment interview data. The interview sessions lasted for an average of 30 minutes each. They were conducted at the interviewee's place of choice, usually their offices within CUT's premises. However, interviews with postgraduate and undergraduate student representatives were conducted in the first author's office. Prior to the commencement of the interview sessions, interviewees were assured of utmost confidentiality. Also, their right to opt out of the study at any point was reiterated. Questions asked during these sessions bothered on the following:

- reasons behind the development and subsequent deployment of the sustainability implementation framework at CUT; and
- whether the drivers (reasons) identified were responsible for the initiation or sustenance of the SD implementation process at CUT.

The interview sessions were recorded with the consent of the interviewees and transcribed. Codes were accorded to interviewees for confidentiality purposes. Such data from the interview sessions and the document review were analysed thematically using qualitative content analysis (Wildemuth and Zhang, 2009). This approach to data analysis allowed the researchers to identify pre-set themes which were central to the study's objectives from the plethora of literature reviewed (Taylor-Powell and Renner, 2003).

Presentation and discussion of finding

As indicated in the preceding section, the findings from the interview sessions and document analysis would be reported according to the broader categories identified in the data. The findings are presented in Table II.

Table II depicts the drivers influencing SD implementation CUT. Nine drivers were identified. Although six were referred to as internal drivers, three were considered external drivers. Additionally, it was observed that with the exception of one driver, all other drivers

No.	Job designation	Code	Stakeholder group
1	Dean of Faculty	DoF1	Top-level Management (TLM)
2	Dean of Faculty	DoF2	Top-level Management (TLM)
3	Sustainability Manager	SM	Support Staff (SS)
4	Infrastructure Delivery Consultant	IDC	Infrastructure Delivery Partner (IDP)
5	Facilities Manager	FM	Support Staff (SS)
6	Clerk of Works	CoW	Support Staff (SS)
7	Construction Manager	CM	Infrastructure Delivery Partner (IDP)
8	Senior Lecturer	SL1	Academic Staff (AS)
9	Senior Lecturer	SL2	Academic Staff (AS)
10	Lecturer	L1	Academic Staff (AS)
11	Lecturer	L2	Academic Staff (AS)
12	Junior Lecturer	JL	Academic Staff (AS)
13	Research Manager	RM	Academic Staff (AS)
14	Finance Personnel	FP	Top-level Management (TLM)
15	Procurement Personnel	PP	Top-level Management (TLM)
16	General Foreman	GF	Infrastructure Delivery Partner (IDP)
17	Post-graduate Student (Doctoral)	PG1	Student Community (SC)
18	Post-graduate Student (Doctoral)	PG2	Student Community (SC)
19	Post-graduate Student (Doctoral)	PG3	Student Community (SC)
20	Post-graduate Student (Master)	PG4	Student Community (SC)
21	Post-graduate Student (Master)	PG5	Student Community (SC)
22	Undergraduate (B.Tech)	UG1	Student Community (SC)
23	Undergraduate (B.Tech)	UG2	Student Community (SC)
24	Undergraduate (B.Tech)	UG3	Student Community (SC)
25	Undergraduate (N.Dip)	UG4	Student Community (SC)
26	Undergraduate (N.Dip)	UG5	Student Community (SC)

Source: Authors' Fieldwork (2016)

Table I. Interviewee demographics

were both referred to as initiating as well as sustaining implementation drivers by the interviewees. This implies that initiating drivers and sustaining drivers are not mutually exclusive, as a driver can be classified as being both.

The subsequent section will engage in a discussion of the identified implementation drivers under the categories into which they were delineated for the purposes of the study.

Cost-related

Extant studies on implementation drivers identify cost as salient factor which influences an organization's decision to implement or not to implement an adopted strategy (Koh *et al.*, 2011). In their study, reduction in operational costs was highlighted as a significant driver for enterprise resource planning implementation. In the case of SD implementation at CUT, interviewees identified four drivers which were categorized as cost-related implementation drivers. During the interview sessions, members of the top-level management (TLM) reiterated the need for CUT to maintain adequate financial sustainability.

According to DoF2:

> [. . .] there is no way anybody can talk about CUT's sustainable development agenda without first talking about the urgent need for financial sustainability [. . .] these are hard times for higher education in this country as funding levels have dropped drastically [. . .] have you heard about the fees must fall protests? To survive, we must continue to attract students and staff with the desired levels of expertise to CUT, and we need high levels of innovativeness and ingenuity to be

Category	Implementation drivers	Classification of implementation drivers				Stakeholder group
		Internal	External	Initiating	Sustaining	
Cost-related	Need to boost the institution's financial sustainability.	X		X	X	SS, TLM
	Reduction in operational costs (energy, water, stationaries and travels)	X		X	X	SS, TLM
	Efficient, effective and leaner procurement processes.	X		X	X	SS, TLM
	Quest for cheaper, alternative sources of energy (renewable).	X		X	X	AS, SS, SC, TLM
Regulation	Need to conform to global, national and provincial SD-oriented legislations and declarations		X	X	X	IDP, SS, TLM
Competitive Advantage	Desire to become an SUoT of repute by transforming the mode of teaching, learning and research activities.	X		X	X	AS, SC, SS, TLM,
	Desire to compete favourably among peer institutions as it pertains to SD through the development of high levels of SD awareness, understanding and competencies among staff and students.		X	X	X	AS, TLM
	Collaboration with a reputable institutional leader in SD from across the globe.		X	X		AS, TLM
Community Engagement	Contribution to the development of societal SD consciousness levels within the HEI's immediate environment-Free State Province.	X			X	SC, SS, TLM

Source: Authors' Fieldwork (2016)

Table II. Identified implementation drivers

> able to achieve this [. . .]. and the sustainable development framework provides us with the opportunity to continue to reengineer the way we do things around here.

This indicates that the pro-SD thinking within CUT's TLM was premised on the belief that SD implementation would enable them to achieve a decent level of financial sustainability. Another interviewee, SM, identified the reduction in operational costs as a major driver for the implementation of the SD agenda.

She stressed that:

> Right now, with the way the projects are being carried out now, it's more focused on the financial. Especially if you look at operations, it's about savings for example on your utility bills.

This statement somewhat corroborates DoF2's previously reported statement. This means that a practical reduction in CUT's operational costs, especially in the areas of energy costs (electricity particularly), water, stationaries, etc. is considered a very critical driver for SD.

Obviously, a reduction in the operational costs is an integral step towards achieving the desired levels of financial sustainability. Bowman (2011) describes financial sustainability as an organization's ability to sustain its financial capacity over a given period of time. Other drivers classified as cost-related drivers include the development of efficient, effective and leaner procurement processes for CUT.

Reiterating the importance of the implementation framework in attaining this objective, PP stated that:

> [. . .] there has always been a strong desire within our department to develop and adopt effective procurement processes [. . .] we do believe that the SD implementation framework will provide us with a platform to achieve this [. . .] To this end, we are currently working on providing a set of sustainable procurement guidelines which would enable us achieve this target.

Also, interviewees from various stakeholder groups agreed on the need to strengthen CUT's resolve to generate considerable quantities of cheap energy through renewable sources at the institution. Documentary evidence alludes to the efforts at CUT to reduce energy costs. Official memos have been circulated, reminding staff and students alike of their responsibility towards reducing energy prices and advising them to ensure effective utilization of energy, particular electricity, whilst on campus.

Furthermore, the Vision2020 report further buttresses the financial sustainability perspective by postulating that:

> "[. . .] an assessment of the financial, infrastructural and staffing situation at the University with respect to the continued successful functioning of CUT in meeting its statutory obligations" remains one of the potential outcomes of SD implementation at the institution (CUT, 2012).

Similarly, this document presents the likely reduction of electricity and fossil fuels as well as the local generation of cheaper renewable energy other probable outcomes. To this effect, the implementation framework has been aligned to a set of sustainability indicators like electrical and water energy consumption per student as well as number of SD projects implemented by various units at CUT (2012). All of these aspects point towards the quest for financial sustainability through the actual implementation of SD.

Majority of the interviewees opine that optimal SD implementation at CUT will engender financial sustainability through a consistent regime of reduced operational costs and other ancillary costs. Such opinions suggest that cost reduction is of significance to participants to the implementation framework and had propelled them to embark on the implementation process.

Regulation

Policies and declarations have been cited as drivers for the adoption of organizational strategies. The higher education sector is no different (Holmberg *et al.*, 2012; Stafford, 2011; Stephens *et al.*, 2008). However, it is interesting to see that the influence wielded by such policies and declarations does not stop at just the adoption phase but further serves both as an initiating and sustaining implementation driver. This was revealed by the interviewees as well as excerpts of the documents reviewed. For instance, beyond the local policy regulations and the need to achieve intra- and inter-generational equity in the utilization of earth's resources, declarations have given verve to CUT's determination to implement the SD agenda. Of significance to this particular context is the 2002 United Nations declaration of the World Decade for Education for Sustainable Development. According to the CUT SD development report, this declaration served as a major influence to the HEI's decision to develop and put to immediate use the sustainability implementation framework.

This much was corroborated by DoF1 who maintained that:

> [. . .] CUT as an institution does not play in a vacuum when it comes to the issue of sustainability and sustainable development, it looks up to the trends being set by various bodies such as the UN, the national government and even the Universities South Africa and takes a cue from these trends.

Besides this, the HEI's desire to contribute to the socio-economic landscape of the Free State province is another driver. This much is attested to by the HEI's vision statement:

> By 2020, Central University of Technology, Free State, shall be an engaged university that focuses on producing quality social and technological innovations in socio-economic developments, primarily in the central region of South Africa (CUT, 2012).

National policy regulations have also contributed towards the implementation activities happening at CUT. For instance, the carbon tax policy of the national government which is expected to come into effect in the coming years has been identified as constituting a probable implementation driver.

PP alludes to this in her statement:

> [. . .] as an institution, we travel a lot. . .and our agents have advised that the carbon tax for such trips would be very costly for the institution to accommodate.

Furthermore, the CUT sustainability report attributes HEI's decision to adopt and implement the SD strategy to the nation's higher education policy which, in turn, aligned to the national strategic commitment to SD (CUT, 2012).

Competitive advantage

This set of drivers happen to be the most recurring factors behind any organization's decision to implement a given set of strategies besides cost reduction based considerations. Competitive advantage refers to circumstances which confer a superior position on an organization over and above its contemporaries. HEIs are organizations and continue to innovate with an objective of achieving a competitive advantage within the higher education sector. According to Porter (1998), such advantages can be achieved through two distinct routes: cost leadership and differentiation. In the former, the organization seeks to provide a product or service at the lowest possible cost to remain competitive among its peers. Conversely, differentiation entails the determination of an organization to set itself apart from its peers (competitors) based on the value that it provides through its products. Evidence accruing from the various data sets explored in this study indicates CUT's adoption of the latter. CUT's aspiration towards assuming an SUoT position and its bid to compete favourably amongst UoTs in South Africa was identified by various interviewees within the TLM, AS and SC stakeholder groups, as a factor which has influenced its desire to commence implementation of the agenda. The content of CUT official documents lends further credence to the viewpoints of these interviewees. For example, a review of the HEI's annual report (2012) and the SD report (2012) all indicate the centrality of its SUoT aspirations to its SD implementation framework.

Another perspective was added by another interviewee, DoF1, who reiterated that:

> [. . .] the issue of sustainable development at the CUT was given a boost by our institutional partnerships with the Aalen University [. . .] This University is miles ahead in the implementation of sustainable development [. . .] as an institution, we were optimistic that we could draw on that relationship to turn around our fortunes from a sustainability angle.

Obviously, such relationship was expected to contribute towards conferring CUT with a competitive advantage within the comity of UoTs in South Africa. According to Grindsted (2011), there appears to be an on-going international competition among HEIs on who the actual leader in campus sustainability performance among various HEIs.

Community engagement

The need for increased engagement with its host community remains critical to the success of the HEI enterprise. This is as a result of the revered position which HEIs have come to assume in the contemporary society as platforms for the knowledge creation and dissemination. Accordingly, HEIs are expected to uplift their immediate communities in terms of increased consciousness levels pertaining to state-of-the-art issues as well as the provision of solutions to societal problems. The need for continuous and improved engagement with its host community, either at municipality, regional or national levels has been identified as factor influencing SD implementation at CUT. Evidences abound, both within reviewed texts and interviewees' statements corroborating this observation. According to a statement credited to CUT's outgoing Vice-Chancellor in one of the reviewed texts:

> As a university of technology, naturally our focus is on SET (Science Engineering and Technology). Since the supply of such students is limited, owing to poor high school pass rates in those subject areas, CUT have taken a keen interest in assisting high school learners in the region, who are enrolled for SET subjects, so as to improve their performance. Our Schools Advancement Academy (SAA) is the over-arching body that coordinates projects that have been designed to equip educators to deliver better education and for learners to perform better. High school learners from one of the projects (Saturday School) that reside under SAA, achieved a 100 per cent pass rate in the National Senior Certificate examination in 2012 (CUT, 2012. p. 10).

This effort at assisting potential undergraduates from the neighbouring could be viewed from a community engagement perspective. Furthermore, this effort is couched under the SD implementation framework. Additionally, another interviewee, L2 opined that increased community engagement had become imperative, as it would develop the consciousness and/or awareness levels of CUT's prospective students on the need for SD. Going further, she reiterated that such awareness would enable them to engage in practices that are aligned to SD tenets when they are enrolled at the HEI eventually. When prompted to clarify her position, she made allusions to the issue of littering, maintaining that such awareness levels would deter such individuals from littering within the CUT campus and thus contribute to the reduction of waste disposal costs.

In furtherance to these observations, it was noticed that none of the interviewees mentioned the preservation of the environment and CUT's desire to contribute to conservation, constituting an implementation driver. Perhaps this could be attributed to the low level of awareness concerning the SD agenda and the sustainability implementation framework itself among various sections of the university's population. This much was observed during the interview sessions. Of course, such low level of awareness has been identified by Velazquez *et al.* (2005) as constituting a significant barrier to SD implementation in HEI. Also, demand from stakeholders has been cited as a significant driver for the adoption and implementation of strategy in similar studies (Koh *et al.*, 2011; Sharp, 2009; Shriberg, 2002). Yet, no mention was made of this driver by the interviewees and the texts reviewed. Whilst this could be an oversight on the part of the interviewees, it could also be a reflection of the low level of SD awareness which exists among various stakeholder groups, especially the students' community. Given their salient position as service users, students and staff of CUT should be making demands like the introduction of

pro-SD-based curricula for teaching and learning as well as research purposes, although it appears that this is not happening judging from the interview responses.

Conclusion

The aspiration of HEIs across the globe to transform into SUs has continued to suffer because of the implementation challenge. This challenge has left many HEIs unsure about whether or not to proceed with SD implementation, notwithstanding that they have already signed up to various declarations both globally and nationally as the case may be. Whilst strategy implementation and its associated challenges are not new, a paucity of studies investigating the phenomena has been noticed. This paucity appears to be more pronounced when viewed from the prism of SD implementation in HE. Most of the studies have sought to focus on the adoption of SD policies and declarations as well as the barriers and drivers for their adoption. This is the gap which this study sought to bridge, albeit as it concerns the identification of drivers influencing an HEI's determination to proceed with SD strategy implementation.

Relying on a qualitative case study research design, the study is set within the context of the CUT. A mixture of semi-structured interviews and documents were used in eliciting relevant data from a purposively selected sample of interviewees. Nine implementation drivers were identified. These implementation drivers were further delineated into four categories: cost-related; regulations; competitive advantage; and community engagement.

The identification of these drivers inadvertently contributes towards encouraging and strengthening the implementation discourse, particularly within the context of SD strategy implementation in higher education. It is expected that the drivers identified can be applied towards the development of a framework for stimulating awareness and understanding, about the imperative nature of SD, among the various stakeholders within the SSA HEI context. Furthermore, findings from this study can serve as an incentive for other HEIs to engage in a robust implementation of the SD strategy.

This study is part of a wider study investigating the implementation of the SD agenda in various SSA HEIs. It is expected that the findings from this study and succeeding ones will engender the development of a suitable framework for engendering optimal SD implementation in SSA HEIs.

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