

Transformation in Institutions of Higher Education in South Africa: An Entrepreneurial Ecosystem Perspective

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Abstract: Transformation in Higher Education can be shown in several ways ranging from transforming strategies on executive management, academic offerings, and services to support staff and impactful deliveries to students. Creating an entrepreneurial ecosystem is seen as one of the instruments of transformation. An entrepreneurial ecosystem needs a community of practice that displays the character of creativity and innovation, risk-taking, an initiator, a strategist, and an active participant in identifying opportunities and making decisions among others in the business. The paper seeks to review transformation in Higher Education through the entrepreneurship ecosystem using a thematic document analysis methodology. It is based on a thematic review of relevant literature and establishes various themes that are essential for the development of an entrepreneurial university. The themes are categorized as: an entrepreneurial University, entrepreneurship in academia, and student entrepreneurship activities. Through the entrepreneurship ecosystem, universities are expected to play a crucial role in building their structures to be economically active; addressing graduate unemployment; providing recovery strategies to reboot businesses in communities, especially after the COVID-19 pandemic; and positioning themselves as entrepreneurial universities. The findings of this study lead to the recommendation that universities should initiate a change process from their traditional orientation to become entrepreneurial universities. It is recommended that government and other stakeholder support should be accelerated for the realization of the envisaged transformation to entrepreneurial ecosystems.

Keywords: Academia, Entrepreneurship, Entrepreneurship ecosystem, Entrepreneurial Transformation, University

1. Introduction

Transformation of the institutions of higher education has become a necessity, particularly in South Africa owing to high rates of graduate unemployment and general joblessness (Lose & Kapondoro, 2020). There is a general impression that these institutions should do more to increase the value of graduates in terms of employability and the creation of employment. In South Africa, these institutions of Higher Education are engaged in a process of transformation by improving curriculums in the programs they offered or structural changes. The transformation is essential given the findings in Jwara and Hoque's (2020) study, which found no relationship between the entrepreneurial intentions of students and the quality of their university life. In other words, the university life of the students was found to lack the inspirational attributes for them to engage in entrepreneurship. This is a critical finding when the problems of graduate unemployment are considered. The intention is to ensure that

graduates from higher education systems are able to either find or create employment.

The transformation process can be shown in several ways, from transforming strategies on executive management, academic offerings, and services to support staff and impactful deliveries to students through an entrepreneurship ecosystem (Hayter, 2016; Clauss, Moussa, & Kesting, 2018). Creating an entrepreneurial ecosystem is seen as one of the instruments of transformation (Sanyal & Hisam, 2018; Cavallo, Ghezzi & Balocco, 2019). An entrepreneurial ecosystem needs a community of practice that displays the character of creativity and innovation, risk-taking, an initiator, a strategist, and an active participant in identifying opportunities and making decisions among others in the organization (Clauss *et al.*, 2018).

For a successful transformation through the entrepreneurship ecosystem, institutions of Higher Education should consider executive roles at different levels.

Organizations that build sustainability into their core strategies are outperforming those that don't, especially looking at environmental factors and climate change (Bradley, Parry & O'Regan, 2020). This assists in creating an entrepreneurial institution (Klofsten, Fayolle, Guerrero, Mian, Urbano & Wright, 2019). The executive role in the entrepreneurial ecosystem entails developing team skills and capabilities and empowering leadership. Leaders need to set simple, measurable, achievable, realistic, and time-bound goals. The set goals should reflect the triad of people, environment, and profit, and focus on creating sustainable impact and implementing sustainable practices. There should be a differentiation between short, mid, and long-term goals that refer to teaching and learning, research, and community engagement as the core business of institutions in Higher Education (Centobelli, Cerchione & Esposito, 2019). Institutions must prioritize their implementation goals and focus on the most important ones. If necessary, plans to achieve goals can be changed but there should be stability in the set goals.

Institutions of Higher education are challenged by several factors that range from producing unemployable graduates to accessing digital platforms and producing research that is not innovative and not impactful to society, among several things (Coral & Bernuy, 2022). On the other hand, these institutions need to be transformed to cater for the needs of the people and reach communities with high-quality programs (National Development Plans Vision 2030, 2022). Institutions in South Africa differ in approaches to adopting an entrepreneurship system. However, with the support of initiatives in the project Entrepreneurship Development in Higher Education, institutions are developing though are at different levels (EDHE, 2022), Hence, this paper contributes to literature gaps and explores how South African Institutions of Higher Education can transform by adopting an entrepreneurship ecosystem to become entrepreneurial institutions. Institutions of Higher Education should find sustainable solutions where they strive to attain entrepreneurship skills such as changing societal problems into sustainable opportunities, saving resources, overcoming barriers, and producing research that talks to societal and environmental needs, to name a few.

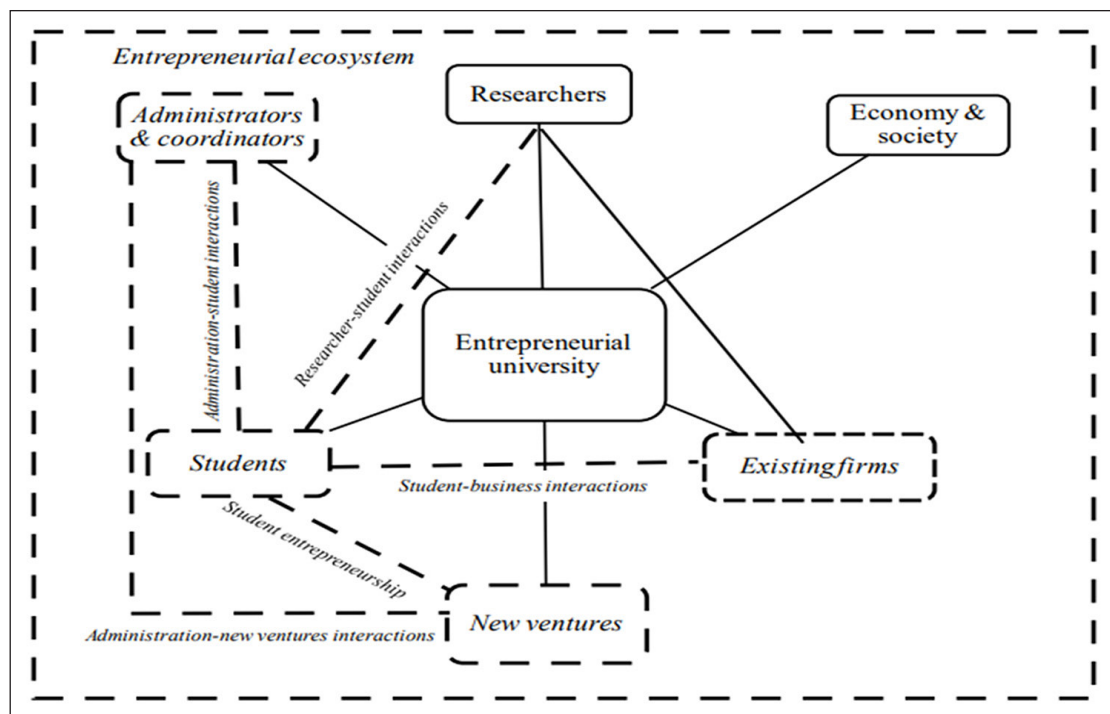
2. Theoretical Framework

The paper aims to review the transformation process of institutions of Higher Education through an

entrepreneurship ecosystem. The social network theory, knowledge spillover theory of entrepreneurship, and theory of change are adopted collectively to explore this process. In other words, these three theories can be effective lenses through which the transformation problem as well as the development of entrepreneurial ecosystems can be viewed. The social network theory entails that for a successful entrepreneurship ecosystem institution of Higher Education should connect with businesses (Clauss *et al.*, 2018; Fuster, Padilla-Meléndez, Lockett & del-Águila-Obra, 2019). It is based on the assertion that universities are not alone and cannot achieve notable societal change without businesses and other stakeholders. This could benefit the institutions in that the knowledge production can be disseminated to relevant businesses and contribute to informed social change. This implies the view that knowledge generated by universities makes relevant in the industry and the practical innovations that happen in industry influence universities.

In addition to the connectivity of the social network theory, the knowledge spillover theory of entrepreneurship confirms that there can be spillover effects from institutions to firms (Fuster *et al.*, 2019). This spillover reinforces that what happens in the industry can go over to influence what happens in universities. The opposite is also to be considered true whereby knowledge spillover from universities to the industry is considered important. This theory entails that the context of where the institution exists should be taken into consideration. The context includes the location of the institution, strategic entrepreneurship, and how institutions relate to others. Institutions that adopt an entrepreneurship ecosystem have a purpose to stimulate economic activities by sharing their knowledge production with firms that need so. Therefore, the two theories applied together can contribute to innovation and development and create an entrepreneurial ecosystem that connects institutions to firms. These ecosystems bring an asocial culture that creates benefits (Spigel & Harrison, 2018).

Clauss *et al.* (2018) suggest a schematic diagram of the entrepreneurship ecosystem for the entrepreneurial university (see Figure 1). The schematic diagram depicts some of the notable linkages and relationships between various components of the university entrepreneurship ecosystem. The paper has alluded that the entrepreneurial university ecosystem comprises researchers, students, firms and

Figure 1: An Entrepreneurial University Ecosystem


Source: Clauss, Moussa & Kesting (2018)

new ventures, society, and administrators. These stakeholders of the ecosystem are coordinated in a way that there are interactions among them to build an entrepreneurship culture. For successful coordination, it is not always a direct interaction between the administrators and firms, but connections can take place wherever there are commercial activities in the ecosystem. This can improve the university's transformation process, especially if it considers the diversity of the ecosystem (Eagle, Macym & Claxton, 2010). Figure 1 displays an integrated entrepreneurship ecosystem.

Figure 1 demonstrates that the entrepreneurial university is composed of entrepreneurial activities by students, researchers, the economy, and society as well as existing firms. This implies that the entrepreneurial university cannot stand alone if it is unsupported by the researchers, the economy, and society as well as existing firms. This implies the creation of a full ecosystem that entirely involves various important stakeholders.

Theory of change refers to how and why an initiative works, and therefore find a link between inputs, activities, outcomes, and the context of the initiative (Meoli, Paleari & Vismara, 2019; Matschoss, Repo &

Lukkarinen, 2020; Coombs & Meijer, 2021). It is relevant in South African universities as they are in the transformation phase, especially in the entrepreneurship space. The theory of change can sharpen the planning and implementation of entrepreneurship through initiatives ranging from university start-ups, and university-community-based business ventures to the commercialization of research. The theory of change involves that the entrepreneurship process begins with an entrepreneur stating the intended outcomes and putting them into context (Coombs & Meijer, 2021). For instance, in this case, the intended outcome is for universities to produce impactful research for communities that have economic value through curriculum corporate governance of structures in the ecosystem. An important economic factor may be the policy environment, where universities provide legislation on funding models of the research project at the stages of an entrepreneurship process (Matschoss *et al.*, 2020). Moreover, another contextual fact may refer to social networks such as how communities can accept the project or how intergroup relations are addressed. The theory of change needs to be plausible in that implemented activities should lead to desired outcomes. There should be economic, institutional, and human resources for the change

to be successful. The entrepreneurial outcomes in the ecosystem should have measurable records of accomplishment under conditions that enhance continuous improvement (Meoli *et al.*, 2019).

3. Methodology

The study is aligned with the qualitative paradigm, which asserts the existence of multiple realities, which can be found through interaction with many respondents (Krauss, 2005). As found in the literature there are many views with respect to the transformation of higher education and the creation of an entrepreneurial ecosystem (Meoli *et al.*, 2019; Coombs & Meijer, 2021). A thematic review methodology is employed. As a result, the search for relevant themes across various articles was deemed appropriate for the study. Thematic analysis is based on the identification and analysis of critical patterns in data that are of interest to a study (Clarke & Braun, 2017). Themes are patterns that provide a way of understanding a study. They are essential in providing general data patterns, which can offer to mean to required concepts related to the study. The thematic analysis, therefore, was essential in this study as it provided important information that was essential for providing meaning. Such information can also be significant as they were drawn from various literature sources.

Fereday and Muir-Cochrane (2006) provide that thematic analysis is a process of pattern recognition that seeks to capture key trends in data to address a certain phenomenon. It is a process of recognizing some important aspects of data and coding the aspect. As such, it encompasses a data reduction process in a manner that effectively captures what is essential for a study. A thematic literature review was deemed suitable for this study as it allows for the summarization of a mature field of study such as higher educational transformation.

Braun and Clarke (2006) posit that there are two types of themes, namely: (1) inductive themes and (2) deductive themes. These themes are based on how they originated. Inductive themes emerge from the collected data while deductive themes are rooted in the literature and are applied to aid data interpretation. Data analysis for this study was based on applying inductive themes to the reviewed articles and establishing how the themes are reflected in the articles. Thematic analysis for this study was important to achieve effective data

reduction and achieve the aim of the study. The articles that were reviewed in this study were purposively sampled from major databases and reviewed. The purposive sampling technique of relevant articles was deemed appropriate given that inductive themes were used. As such, articles that contained elements of the inductive themes were chosen for further analysis. The analysis took note of how the themes were explained and how they were linked. Purposive sampling tends to be an important technique in thematic analysis as it allows a study to focus only on the relevant items linked to the study.

4. An Entrepreneurial University

The theme 'entrepreneurial university' emerged from significant sections of the literature and was sought from the articles reviewed. It was established that there are wide lessons to be learned from other countries on how to build an entrepreneurship ecosystem in institutions of Higher Education. For instance, in Malaysia, Ahmad, Halim, Ramayah, Popa and Papa (2018) shared that there are guidelines and policies that should be formulated to build a strong entrepreneurial university; otherwise, existing activities are not formally coordinated. In addition, in the Finnish university, research and education have been found to promote academic tasks for technology innovation and the transfer of knowledge (Lahikainen, Kolhinen, Ruskovaara & Pihkala, 2019). Therefore, an entrepreneurial university provides solutions to the environment that has unpredictable effects in its own context. The theme 'entrepreneurial university' as reviewed above has an international dimension and tends to be meaningful when comparatively analysed with other countries. Furthermore, solutions should focus on alleviating employment of the graduates in society (Ncanywa, 2019).

An entrepreneurial university transforms from traditional ways and has key structural reform. The organisational structure creates posts that focus on entrepreneurship, teaching methods that are entrepreneurial, have a clear incentive system forms strong partnerships with external stakeholders, and have incubators with technology transfer officers (Lahikainen *et al.*, 2019). The above arguments demonstrate that the entrepreneurial university embraces various other essential sub-themes. There are significant observations that an entrepreneurial university can contribute to the enhancement of an entrepreneurial mindset to ease the pain of

academics on approaches adopted to introduce the entrepreneurship ecosystem (Matschoss *et al.*, 2020). Additionally, an appropriate entrepreneurial university ecosystem can be expected to include policies on patents, intellectual property rights, and licensing of products or services produced by academics. Concisely, academics should be able to change ideas from problems to business opportunities for personal and institutional gains (Klofsten *et al.*, 2019). This adds value to the ecosystem not to be a profit-making organisation but create a valuable system for society while enjoying some economic gains.

In an entrepreneurial university, academics should vision themselves as academics that have a role of an entrepreneur. Being an entrepreneur should not be seen as a separate responsibility from the core function of the institution (Ahmad *et al.*, 2019). Instead, it should be seen as an expansion of core responsibilities where for instance outcomes of research can be commercialized. The university should provide entrepreneurship centers or clinics for venture creation where there is a balance between teaching, research, and entrepreneurship (de Araujo Ruiz, Martens & da Costa, 2020). Additionally, the review conducted demonstrated that the concept of an entrepreneurial university is new in the South African context and there are various lessons that South Africa may have to learn from other countries for the effective development of an entrepreneurial university.

Based on the entrepreneurial university ecosystem displayed in Figure 1, the pillar of research informs that an entrepreneurial university develops entrepreneurship education courses (Clauss *et al.*, 2018). These form bases of the commercialization process where areas of innovation and research develop new products or services. Researchers are encouraged to be engaged in research that addresses the sustainable development plans and the challenges of the country such as issues of quality education, poverty, unemployment, and others (Sanyal & Hisam, 2018). Research produced should inform policy and there should be an authentic review of the produced research and elements that talk to society. Consistency with the spillover theory is essential to ensure a strong symbiotic relationship between elements of the entrepreneurial university and those of the industry. Research also informs administration where metrics are used to evaluate outcomes of the research in a virtual cycle as alluded to in the theory of change (Clauss *et al.*, 2018).

The university admin pillar in Figure 1 further acknowledges that the university administration allocates resources that can be used to build an entrepreneurial culture. In addition, the university administration constructs structures and provides an incentive system in terms of intellectual property rights, licenses, and patents. There should be a public policy on economic activities and how the entrepreneurial university contributes to the economic development policies of the country. This coordination between public policy and universities can assist the government to provide relevant resources for developing the state.

5. Entrepreneurship in Academia

Academics provide entrepreneurship courses to students and communities as a community engagement activity. For instance, Muscio and Ramaciotti (2019) attest that the provision of entrepreneurship education can influence students' intentions to start a business. This provides an alternative plan for students in case they become unemployed when they complete their studies. Academics who provide entrepreneurship skills to students encourage them to be able to shape their entrepreneurship decisions (Rahim *et al.*, 2015). There should be training to empower academics to be able to provide entrepreneurship education.

While it is true that academia should offer entrepreneurship education, it is also important for academia to be practicing entrepreneurs so that they teach reality and the courses that they offer are a mirror of what they really do (Gubbins, Harrington & Hines, 2020). The argument that it is important for academics who teach entrepreneurship to be practicing entrepreneurs links to the spillover theory in that it is essential for entrepreneurs in the industry to be part-time academics. Having practicing entrepreneurs, as part-time academics, tends to foster the spillover of knowledge and skills from industry to the university (Lose & Kapondoro, 2020). Such an arrangement is also important as it creates a unique relationship between industry and universities. Educational initiatives can take the entrepreneurship dimension if academia takes an entrepreneurial approach to instruction.

Entrepreneurship education should be provided by academics who are trained in the mode of delivery of entrepreneurship (Mandel & Noyes, 2016; Gubbins *et al.*, 2020). For instance, entrepreneurship

can be taught in a practical way, where students "learn by doing". The practical approach exposes students to developing problem-solving and creativity skills. The most common assessment method is when students at end of the course can write a business plan essential for funding and marketing the business (Gubbins *et al.*, 2020). The best way to realize this is for academics to be entrepreneurs so that they teach what they do practice. This creates an important motivation whereby the learners are motivated to do what the lecturers do (Ncanywa, 2019).

A good entrepreneurship course should show students how to formulate a business plan that provides best practices to empower students on the best marketing strategies (McKenzie, 2017; STEP, 2022). It should also be strong in demonstrating the fundamentals for economic academics including the soft skills required in real entrepreneurial activity. For the full realization of the entrepreneurial university, it appears essential for learners and academics to have a greater passion for entrepreneurship. Examples of marketing strategies are when business owners capitalize on a product/service that is unique, high quality, low-priced, satisfies other needs of your target audience, or a combination of these (STEP, 2022). The marketed product needs to be tested before the business starts and compared with the competitors to identify a competitive advantage (Gubbins *et al.*, 2020). This would assist in showing that delivery will be on time and how you would overcome problems.

A good business plan comprises advertisement plans, promotion activities, and how to reach target groups (McKenzie, 2017). These include digital and new technologies, brochures, flyers, and particularly word-of-mouth. There should be a written plan on how to create and maintain relationships to retain customers, and this can be documented in a people's book (STEP, 2022). Customer satisfaction through positive word of mouth can reduce the cost-of-service delivery. Trained entrepreneurs apologize when in the wrong, build trust, and are polite, courteous, and respectful (McKenzie, 2017; Gubbins *et al.*, 2020; STEP, 2022).

6. Student Entrepreneurship Activities

One of the student entrepreneurship activities involves the provision of entrepreneurship education to students to enhance their creativity and

critical thinking (Hussain & Norashidah, 2015). The entrepreneurial university should be operationalized by real entrepreneurial activities among academics. In other words, entrepreneurial education should translate to real entrepreneurial activities. Entrepreneurship education would imply the inculcation of entrepreneurial habits and ideology among university students. This can be expected to finally lead to real entrepreneurial practice, which is centered on job creation (Ncanywa, 2019).

Creativity entails the ability to identify ideas from problems and find solutions that can be seen as business opportunities (Lose & Kapondoro, 2020). An entrepreneurship ecosystem delivers an environment that balances the needs of society with the knowledge capabilities of the university (Muscio & Ramaciotti, 2019). In this ecosystem, entrepreneurial education empowers students on issues of attracting start-up capital and setting goals with plans on how to have a sustainable business. Entrepreneurship education is useful to all fields of study provided by the university.

Students should be given platforms where they produce entrepreneurship during the time they are still students (Muscio & Ramaciotti, 2019). That can motivate them to become entrepreneurs after graduation. This offers them time to engage in entrepreneurship under the guidance of their universities thereby setting the stage for further entrepreneurial activities (Ncanywa, 2019). There can be new ventures where students form associations and communities of practice and learn about entrepreneurship activities in their own spaces (Walter & Block, 2016). For example, the number of students who participate in entrepreneurship competitions and use the prizes to increase their revenues is one of the milestones that can be recorded in the entrepreneurship ecosystem. The ability of students to write business plans and use them for acquiring funding is one of the measures to show a successful entrepreneurship ecosystem through student entrepreneurship activities (Muscio & Ramaciotti, 2019).

It has been documented in the literature that entrepreneurship education can play a big role in the entrepreneurship activities that students engage in (Siegel & Wright, 2015; Guerrero, Liñán & Cáceres-Carrasco, 2021; Bergman & McMullen, 2021). Some of these activities can start informally, but when students receive entrepreneurship education, they

formalize their businesses and can register their businesses. Through entrepreneurship education, students learn in a systematic way how to change ideas into actions by demonstrating skills such as leadership, goal setting, planning and implantation, financial management, overcoming barriers, and market strategies to name a few (Siegel & Wright, 2015). When the activities are more formal and advanced, students engage in activities like the commercialization of research and licensing issues. The acquisition of entrepreneurship education does not necessarily mean all students who have undergone entrepreneurship education are going to participate in the start-up but can use entrepreneurship skills as an alternative plan to employment.

The Technology Transfer Office (TTO) needs to be established in universities. The TTO is key to commercialization; enhances students with an entrepreneurial mindset (Guerrero *et al.*, 2021). TTOs are better informed about entrepreneurship activities and can link students and staff with markets to promote university economic activities. There is a need for universities to institutionalize TTO structures in the university to position the integrated entrepreneurship ecosystem.

Teaching methodologies focussing on entrepreneurship education are realized as variables that influence students' entrepreneurial intention to start their own businesses (Arasti, Falavarjani, & Imanipour, 2012; Kalyoncuoglu, Aydintan & Goksel, 2017). It is anticipated students who register for entrepreneurial education and training as a formal qualification will likely get the knowledge and skills to participate in entrepreneurial activities (Ncanywa, 2019). Some of the key characteristics of entrepreneurs such as taking risks and challenges associated with setting up their own businesses can be explored when students learn entrepreneurship education (Kalyoncuoglu *et al.*, 2017).

7. Conclusion and Recommendations

The study aimed to review transformation in Higher Education through the entrepreneurship ecosystem using a thematic document analysis methodology. The themes are categorized as an entrepreneurial university, entrepreneurship in academia, and student entrepreneurship activities. Through the entrepreneurship ecosystem, universities are expected to play a crucial role in building their structures to be economically active; addressing

graduate unemployment; providing recovery strategies to reboot businesses in communities, especially after the COVID-19 pandemic; and positioning themselves as entrepreneurial universities.

It can be concluded that the entrepreneurial university has become an essential progression given the many problems being encountered by graduates in the job market. This study has established the need for an ecosystem where the entrepreneurial university is composed of entrepreneurship in academia as well as entrepreneurship activities by the students. These findings call for government support in the form of resources to ensure the effective development and growth of the entrepreneurial university phenomenon. If the universities' ecosystems can provide an enabling environment for boosting entrepreneurship development, the unemployed graduates can venture into business and improve their standards of living. This can enhance the socio-economic development of society through an entrepreneurship ecosystem in institutions of Higher Education.

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