

UNIVERSITY OF TAMPERE
School of Management
Higher Education Group

**The state of entrepreneurialism in a public university in Ethiopia:
Status, challenges and opportunities**

Master in Research and Innovation
in Higher Education (MaRIHE), a
joint program provided by the
Danube University Krems (Austria),
University of Tampere (Finland),
Beijing Normal University (China),
and Osnabrück University of
Applied Science (Germany)

Master's Thesis
June 2016

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Title of Thesis:	The state of entrepreneurialism in a public university in Ethiopia: Status, challenges and opportunities
Master's Thesis:	120 pages, 1 annex, 10 tables, 5 figures
Time:	June 2016
Keywords:	Entrepreneurial university, dynamics, knowledge transfer, steering core, development periphery, academic heartland, culture, diversification

Over the past few decades the entrepreneurial university model has emerged as mechanism of maintaining balance with the increasingly shifting HE environment. Against this background the study assessed the state of entrepreneurialism in a public university in Ethiopia (i.e., Addis Ababa University) by using Clark's seminal work on entrepreneurial university (Clark, 1998), as analytical framework. The study adopted a qualitative case study design. Data was collected through one to one interview, focus group discussion, documents analysis and site visit. A total of 44 participants with distinct characteristic (i.e., ministers, city mayor, vice presidents; Directors, deans, department heads, academic staff and students) took part in the study. The data was analyzed thematically using directed content analysis. Findings of the study showed that the university has a weak self steering capacity (as its autonomy and managerial capacity are compromised); moderately stimulated academic heartland; weak development periphery; strong diversified funding base and infant entrepreneurial culture. Moreover, the entrepreneurial elements were found to be loosely coupled with each other. Additionally, the study uncovered a number of impediments (excessive procedures; low compensation; lack of 'real' space for bottom up initiatives; lack of incentive, lack of financial and technical support for innovative ideas; poor financial recording and management system) inhibiting entrepreneurial behavior within the institution. Lastly, a suggestion was made towards the aforementioned barriers.

Acknowledgement

First and foremost I would like to thank the almighty God. Second I want to thank my elder brother and mentor Shimels diriba for his unwavering support. I am also greatly indebted to my supervisor Seppo Hölttä, whose positivity and curiosity to see others grow is a source of inspiration.

My gratitude also goes to my MARIHE-3 and MARIHE-4 class mates. I would especially want to thank Yibeltal Ayalew, for the academic and non academic discussion we had. I also want to extend my gratitude to other fellow Ethiopians (Addis, Simeneh, Herani, Filagot, Rediet, Yohannes and Haftu) whom I met during this enriching journey.

I would also like to thank all Higher Education Group (HEG) staff at the School of Management (Dr. Yuzhuo Cai , Dr. Jussi Kivistö and Dr. Vuokko Kohtamäki and Maria Ranta) for their support and assistance. Lastly, I also want to thank the Participants of the study without whom the completion of the study would have been impossible.

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List of abbreviations

BPR	Business Process Re-engineering
BSC	Balanced Score Card
FDRE	Federal Democratic Republic of Ethiopia
MoE	Ministry of Education
HEI	Higher Education Institution
WHO	World Health organization
UNICEF	United nations children's fund
MoST	Ministry of science and technology
HEP	Higher education proclamation
R & D	Research and Development
GTP	Growth and transformation plan
ICT	Information communication technology
MoFED	Minsitry of finance and economic development

Chapter One: Introduction

1.1 Background of the study

Innovation has always had a great impact on economic development. However, it is only recently, (particularly after the late 1950's) that the instrumentality of innovation started to get wide recognition amongst scholars (Dent, 2011). Understandably, being the most intangible of the factors of production (Land, labor, capital), it has remained unaccounted for, by economists for hundreds of years (Rosenberg, 2004, p.2). The transition to the 21st century, which is widely characterized as the knowledge era, however, has amplified the importance attached to innovation (Cassiolato, Lastres, & Maciel, 2003). Being cognizant of its instrumentality, private corporations in the industry are allocating a significant sum of their budget¹ in R&D activities (Philips & Coy, 2015). From governments part also, a trend of building and revitalizing national innovation capacities is evident globally. Likewise there is an increasing expectation from Higher education institutions (HEIs) to play their part in fostering innovation in today's knowledge age.

In this token, the sufficiency of the two long standing objectives of HEIs (teaching and research) have been brought to the spotlight (Arnaut, 2010). Creating knowledge for the sake of merely knowing does not suffice anymore. HEIs are expected to apply the knowledge created for solving societal problems and bringing about socio-economic development (Etzkowitz, 2003). At the same time, there is an increasing demand for quality and accountability, among other things (Cowan, 2013). Interestingly enough, such expectations are looming in the face of declining pattern of government funding; all necessitating entrepreneurial response. According to (Gibb, Haskins, Hannon, & Robertson, 2012, p.5) the survival of university in today's turbulent environment to a great extent depends on "*their ability to infuse entrepreneurship in their administration, faculty and students*" (See also Clark, 1998, 2004; Etzkowitz, 2008).

This increasing expectation from universities has also resulted in an increasing number of publications on academic entrepreneurship (Rothaermel, Agung, & Jiang, 2007). According to, Rothaermel, et al. (2007), the pool of knowledge on university entrepreneurship can generally be classified in to four broad categories: (i) entrepreneurial research university, (See, Lee & Gaertner 1994; Owen-Smith, 2003; Etzkowitz, 2003; Friedman & Silberman, 2003; Powers & McDougall, 2005) (ii) productivity of technology transfer offices (See, Siegel, Waldman, Atwater, & Link, 2003; Chapple, Lockett, Siegel, & Wright, 2005; Markman, Gianiodis, Phan, & Balkin, 2005) (iii) new firm creation, (see, De Coster, 2005; Di Gregorio & Shane 2003; Grandi & Grimaldi, 2003) and (iv) environmental context including networks of innovation (see, Lee and Osteryoung, 2004; Link and Scott, 2003; Loftsen and Lindelof, 2005).

¹ in the US for example the total expenditure on R&D by private institutions was \$316 billion, as of 2015 (Philips & Coy, 2015)

This global wave of interest to make universities more entrepreneurial is not limited to advanced countries. Although, the number of studies and the number of universities recognized as ‘*entrepreneurial*’ are highly clustered in advanced nations, it is fair to say that entrepreneurial transformation is equally important to developing countries, considering its clear implication for sustainable socio-economic development (Doh, 2012).

Ethiopia is a developing country, situated in the horn of Africa. With an estimated population of 90 million (as of 2015), Ethiopia ranks as the second most populous country in Africa (Central statistical agency [CSA], 2015). Over the past few years, Ethiopia has made significant strides in economic and education fronts, under the auspices of the incumbent government. In terms of the economy, Ethiopia is one of the few countries to have recorded double digit growth for the better part of the last decade (National Planning Commission [NPC], 2015). Likewise, the HE sector has seen a significant improvement in terms of accessibility over the past two decades.

However, the Ethiopian economy to date is predominantly agriculture based and the percentage of the rural population is one of the highest (85%) in the world (Trocaire, n.d.). Moreover, the Ethiopian agriculture is massively rain-fed, as such it is susceptible to variability² of the weather condition, and as such the country has been battling with a repetitious cycle of drought³.

The role of entrepreneurship in fostering economic development and/or alleviating poverty is recognized by the Ethiopian government (Debela, 2011). This is reflected in several of the development strategy documents (such as National Micro and Small Enterprise Strategy [NMSES], and Growth and transformation plans [GTP-1, GTP-2]) which place high importance to venture creation. To this end, the government has also been working with developmental partners. To mention some examples, ‘*Women entrepreneurship development project*’, with World Bank; ‘*the entrepreneurship and business growth in Ethiopia project*’, with Digital-opportunity-trust; and ‘*Applied Entrepreneurship Education Program*’, with Neu-Ulm University of Applied Sciences (World Bank, 2014; Digital-opportunity-trust, 2014; Neu-Ulm, 2013).

However, strikingly, the role of universities and/or university graduates in the process of venture creation seems to have been overlooked. For instance, in Addis Ababa (the capital city) where the NMSES have had great success⁴ the primary participants are not university graduates (Debela 2011). This is in stark contrast to contemporary innovation models such as the triple helix (Etzkowitz & Leydesdorff, 1997) and other successful practical examples which put universities and their graduates at the forefront of innovation. This observation is one of the

² a change in the amount (too much or too little rainfall), frequency (number of times)and timing (which season) are all climate related factors that determine the agricultural output in any given year (Lemi, 2005).

³ Ethiopia has been exposed to ten major droughts in the period 1980 through to 2010 (Trocaire, n.d.).

⁴ i.e., it resulted in 686,083 job opportunities between 2003 and 2010.

reasons which motivated the researcher to undertake this study. The motivation and justification of the study will be expounded in the following section.

1.2 Statement of the problem

This study is underpinned by three interconnected presumptions. The first premise is that entrepreneurial university transformation is invaluable to Ethiopia. Second, understanding the underlying factors is the prerequisite to building an entrepreneurial university. Third, little is known about entrepreneurial transformations in developing countries in general and Ethiopia in particular.

Presumption One: entrepreneurial university model is invaluable to Ethiopia

The researcher takes the position that entrepreneurial university transformation is a step in the right direction for Ethiopia. In this regard a number of compelling reasons can be cited; the first of which is resolving the '*Higher education expansion dilemma*' the country is experiencing.

Cognizant of the role of education to Poverty alleviation strategies, the government of Ethiopia has been heavily investing in education in general and HE in particular. The increasing investment has resulted in the exponential growth of the number of public HEIs. However, to date the Ethiopian higher education system remains to be highly elitist, supporting only around 6% of the age cohort (West, 2015). This implies that more expansion measures are under the horizon. However, at the same time there are other underdeveloped sectors of the economy (such as health, transportation, ICT) which are competing for the very limited budget of the government, creating an '*expansion dilemma*'. Clearly, one viable solution to address the aforementioned challenge is, creating self sustaining universities with a diversified funding base.

Secondly, related to the fast paced HE expansion, maintaining quality has emerged as a major challenge (Ashcroft, 2010; Rayner & Ashcroft, 2011). The quality problem has mainly aggravated as a result of the capacity deficit at various levels⁵, which is not keeping pace with the expansion. Once again, it can be argued that the added financial capacity, entrepreneurial universities will gain by collaborating with external stakeholders, will allow them to upgrade their capacity, there by contributing to quality enhancement.

Thirdly, entrepreneurial universities with their innovation oriented students and staff could contribute to addressing the unemployment challenge of Ethiopia. The HE expansion mentioned above has resulted in unprecedented growth of the number of graduates. However, the growth in the industry has not been sufficient enough to absorb the growth in the education sector, creating a Demand-Supply imbalance (Broussard & Tekleselassie, 2012). Consequently, employability has appeared as a key challenge in the Ethiopian HE landscape (Van der Sijde, Popma, Tushun

⁵ This is to mean that there are capacity limitations related but not limited to, Governance, number and qualification of instructors, and facilities in Ethiopia.

2012, p.40). One viable alternative to these challenge could be educating job creators rather than job seekers, which brings an important aspect of -entrepreneurial university into the fore.

Presumption two: understanding the underlying factors is the prerequisite to building an entrepreneurial university

Obvious it may seem it is important to point out the second premise of this research i.e., *'understanding the contextual realities is essential to bring about entrepreneurial transformation'*. Universities being one of the oldest and arguably, most resilient institutions (Röpke, 1998, p.3; Fuller, 2005) require careful consideration before any magnitude of change is envisaged. This is to mean that, the success of any transformation in the realm of academia is dependent on understanding the deep lying norms, ethos, relationships and histories that underpin the system (Doh, 2012). As Clark (1998), notes

[Entrepreneurial transformation] does not happen because a solitary entrepreneur captures power and runs everything from the top-down: such cases are exceptions to the rule. Universities are too bottom-heavy, too resistant from the bottom-up, for tycoons to dominate very long. P.4

It is therefore, of paramount importance to understand the internal and external dynamics that uniquely characterize universities before embarking on any transformations in a university setting. Another presumption rooted in the above premise is that, there is not enough study, hence enough understanding, about academic entrepreneurship in the context of developing countries (see the following section).

Presumption three: little is known about entrepreneurial transformations in developing countries

This section will reflect on the lack of sufficient study as regards academic entrepreneurship in the context of developing countries in general and Ethiopia in particular. To this end, an extensive review of the relevant literature was undertaken.

As a starting point, the articles that were cited by Rothaermel, et al. (2007)⁶, were considered. The review showed that the vast majority of the studies are undertaken in the context of North America and Europe. Even in the case of conceptual papers without empirical data the examples often illustrate the realities of developed countries.

⁶ Rothaermel, et al. (2007) conducted, arguably the most comprehensive review of articles that were published in referred journals from 1981-2005.

Secondly, in consideration of the time lapse (between 2005 and now) and the possibility of a change in the trend identified above; three of the main⁷ publishers (*‘Research policy’*, *‘The journal of technology transfer’*, and *‘Technovation’*) were reviewed for the past three years (i.e., from 2013 to 2015).

The search resulted in 89 articles⁸. Of these the vast majority of the articles 73 (82%) are empirical studies undertaken in Europe and the U.S. while seven of them, (i.e., Bozeman, Fay, & Slade, 2013; Audretsch, 2014; Shah, & Pahnke, 2014; Audretsch, Lehmann, Link, & Starnecker, 2014; Nelson, & Monsen, 2014; Rasmussen, & Wright, 2015; Bleda, & Del Río, 2013) are conceptual papers which once again heavily draw from the experiences of the U.S and Europe. Whereas, four of the studies (i.e., Gerbin, & Drnovsek, 2015; Kochenkova, Grimaldi, & Munari, 2015; Perkmann, Tartari, McKelvey, Autio, Broström, D’Este, Sobrero, 2013; Kochenkova, Grimaldi, & Munari, 2015) are literature reviews.

Only, the remaining five articles (Gross, 2013; Zou, & Zhao, 2013; Bodas Freitas, Marques, & Silva, 2013; Al-Atabi, & DeBoer, 2014; Hang, Garnsey, & Ruan, 2015) which account for nearly 6% of the studies, are undertaken in the context of developing countries. However, even these five articles are undertaken in countries with strong economies such as (China, Brazil and Malaysia) that are quickly transitioning in to a developed country status, if they haven’t already.

Table 1, number of articles on academic entrepreneurship (2013-2015)

Journal	2013	2014	2015	Total
Research policy	11	12	7	30
The journal of technology transfer	10	14	25	49
Technovation	1	3	6	10

Thirdly, in consideration of the possibility that Ethiopian researchers may opt for local research outlets, a review of referred journals published by Ethiopian universities such as (Ethiopian journal of education & sciences, Ethiopian journal of applied sciences & technology, published by jimma university; Bahirdar journal of education, published by Bahirdar university; The East African Journal of Sciences, published by Hramaya university) were considered, provided that the publications are accessible online.

⁷ Main in this context refers to those journals which published the higher number of articles on university entrepreneurship. According to Rothaermel, et al, 2007, ‘Research policy’, ‘The journal of technology transfer’, and ‘Technovation’ accounted for more than half articles published on academic entrepreneurship from 1981-2005.

⁸ The journals were filtered by using the following key words: entrepreneurial university, university entrepreneurship, academic capitalism, and commercialization of research.

The search returned a limited number of results which were mostly published in the past five years indicating that the investigation of the topic in the Ethiopian context is an emerging phenomenon. Of these studies, a majority of them (Negash & Amentie 2013; Kannan 2015; Zegeye, 2013; Megibaru, 2014; Teshome, 2014; Mekonen, 2015) analyzed the motivation and intention of students as regards business start ups. While, some of the other studies (Kannan, 2012; Gerba 2012; Getachew & Tigro, 2012) analyzed the quality of entrepreneurship education at a university from the perspective of curriculum, method of delivery and availability of resources.

Perhaps the closest attempt to study entrepreneurialism amongst Ethiopian universities is undertaken by (Van der Sijde, Popma, & Tushune, 2012 and Mudde, Gerba, & Chekol, 2015) respectively. The former in their study of community engagement of Ethiopian universities, touched up on some important elements of an entrepreneurial university defined by Clark (1998); Viz, development periphery, diversification of finance and collaboration with the community at large and gave an impression that all the Ethiopian universities are lagging behind in all the three fronts. However, they did not provide an explanation of why this is so. Nor did they account for the other equally important entrepreneurial dimensions such as culture and entrepreneurial support systems. Understandably, since the major focus of their study was on regional collaboration, some important elements were left unattended. Nonetheless, they made a valuable contribution as to the existence of the problem.

Secondly, Mudde, et al. (2015), on their study of '*Entrepreneurship Education in Ethiopian universities*', unraveled a wide range of problems as regards entrepreneurship education amongst Ethiopian universities. Particularly, problems pertaining to governance and structure, capacity, entrepreneurial support systems, and community engagement were identified. However, their study is not free of limitations as well.

Firstly, the discussion being very generic didn't sufficiently reflect on the entrepreneurial practices of the participating universities individually⁹. Secondly, in relation to the methodology two limitations are apparent. Firstly, as the researchers themselves concede the number of respondents from the case university (Addis Ababa university [AAU]) were low (Mudde, et al., 2015, pp.39), second, although the participation of seven staff from AAU was mentioned, no demographic information was given regarding their colleges or departments and whether they are holding leadership positions (directors, deans, department heads or liaison officers). As such it is difficult to determine if the members of the steering core, the academic heartland or the development periphery were all represented in the study.

⁹ Addis Ababa university is specifically mentioned under the finding of the study only once by Mudde, et al., (2015, p.63)

In a nut shell, the above review of both local and international knowledge outlets makes it apparent that little is known about the state of entrepreneurialism amongst Ethiopian HEIs and the factors that are facilitating and/or hampering their progress.

1.3 Purpose of the study

As argued in the previous sections, the need to undertake entrepreneurial transition amongst Ethiopian universities is essential for various reasons of practical importance. However, little is known about how Ethiopian universities are faring in terms of entrepreneurial practices. The main purpose of this research is therefore to make a modest contribution to the existing body of knowledge by analyzing the state of entrepreneurialism in one of the most senior public university in Ethiopia: AAU. While doing so, the dynamics of entrepreneurial elements identified by (Clark, 1998) will be used as analytical tool.

1.4 Research questions

Main question

In order to achieve the purpose outlined above, the following main research question is formulated

- How do internal and external stakeholders view the dynamics of entrepreneurialism at Addis Ababa University (AAU)?

Sub questions

In order to have a comprehensive understanding of the phenomenon and provide solid explanation for the main research question, the following sub questions are formulated.

- What is the status of the five entrepreneurial elements identified by Clark (1998) at AAU?
- How is the interrelationship of the five entrepreneurial elements?

1.5 Significance of the study

In today's knowledge-economy where there is a high reliance on innovation (Cassiolato, et al., 2003), the significance of a study that evaluates entrepreneurial initiative/elements is unquestionable; even more so, for a developing country like Ethiopia which is confronted with a multitude of socio-economic challenges.

On a more specific level, the study will allow the institution under consideration (AAU) to have a deep understanding of which entrepreneurial initiative and/or elements are working and which are not and most importantly, what are the major bottlenecks hampering the progress of entrepreneurial initiatives. Secondly, since AAU is considered as the flagship university in Ethiopia, other junior universities could draw lessons from the findings. Thirdly, on a more macro level, the findings of the study could inform key decision makers in governing bodies including, but not limited to; ministry of education, higher education strategy center, business organizations and regional and national development offices and administrators.

Lastly, on a more conceptual level, the study could make a contribution to the scant literature on academic entrepreneurship in the context of developing countries. As such it could act as base for future research.

1.6 Scope of the study

The study has both physical and conceptual, delimitations that should be laid bare from the outset. Physically, the study will only focus on one public university (AAU) and hence it is not possible to generalize the result to the country as a whole.

Conceptually, the study aims to show the current status of entrepreneurialism in the case university by using the five essential elements identified by Clark (1998) as analytical tool. However, in sharp contrast to Clark (1998), the purpose is not to show how or why the university underwent entrepreneurial transformation retrospectively. Rather it simply tries to provide better understanding of the current state of play of entrepreneurialism at AAU.

Chapter Two: Literature Review

2.1 The evolution of Entrepreneurial University: a historical perspective

Universities as one of the oldest and arguably most resilient institutions (Ropke, 2000, p.3; Fuller, 2005) have undergone significant reforms and expansions over the course of their existence albeit incrementally (Bess & Dee, 2008, p.2; Jencks & Riesman, 1968, p.13). In relation to that, this section will briefly discuss the major transition of universities, i.e., from predominantly teaching-based institutions to teaching and research oriented institutions and now in to entrepreneurial institution.

2.1.1 Universities as teaching-oriented institutions

Universities in their original conception have been set up primarily as teaching-oriented institutions. Ideas such as ‘cultivating the mind’ and ‘raising the intellectual tone of the society’ characterize the very first universities that appeared in Europe during the medieval time. For instance, the University of Bologna (1088) which is widely recognized as the first university in Europe had the primary purpose of training some selected members of the community in the field of Law (Geuna, 1996; Brief History, 2014). The university was structured around its students rather than the teachers or (masters as they were called then), implying the focus was more on education rather than research. As Kerr (1963, p.21), states in Bologna “*the students had all the power [...] their guilds ran the university and dominated the masters*”. Similarly, other seasoned universities in Europe, such as university of Oxford (1096) and Salamanca University (1218) had educating students in various disciplines as a major purpose of establishment (University of Oxford, n.d.; Salamanca University, n.d.).

Perhaps, the nature of universities before the rise of the ‘*research university*’ in the 19th century closely resembles the ‘*idea of a university*’ espoused by the renowned scholar Henry Newman (Garrido, 2002, p.46). According to Newman as cited in Kerr (1963, p.3), teaching and research are mutually exclusive functions and universities are best positioned to carry out the former than the latter. In other words, universities should leave the task of research for other institutions and solely focus on teaching for the two cannot be united. Additionally, Newman considered knowledge as an end in its own right (Newman, 1907). As such he gave little attention to knowledge with practical relevance (Kerr, 1963, p.3).

However, as we shall see in the subsequent sections, both propositions were sharply challenged as universities started to transition in to a research university firstly, and now in to an entrepreneurial one.

2.1.2 The rise of the research university: the Humboldtian model

Until the beginning of the 19th century universities predominantly remained teaching based institutions (Altbach, 2011, p.14). Most researchers correlate the incorporation of research in to

the core function of universities with the major reforms introduced at the University of Berlin under the auspice of Wilhelm von Humboldt (Altbach, 2011, p.14; Geuna, 1996, p.29). Humboldt, the then ‘*Head of the Prussian educational administration*’ was tasked with the daunting challenge of linking higher education with economic progress, which at the heart of it had the objective of making Germany politically influential state (Altbach, 2011, p.14; Geuna, 1996, p.29; Scott, 2006, p.20). To that end, Humboldt introduced significant reforms which to a greater or lesser extent are still prevalent in today’s universities.

The Humboldtian model is underpinned by the amalgamation of teaching and learning (*die Einheit von Forschung und Lehre*) in to the core purpose and function of a university (Ash, 2005, p.246). This is in sharp contrast to Newman’s proposition that the two cannot be united. Second, Humboldt emphasized on the provision of autonomy both for teachers and learners. As such he maintained that the involvement of the state in the affairs of the university should only be limited to the provision of resources (Ruegg, 2011, p.12). Thirdly, Humboldt also advocated “*Liberal education*” particularly, philosophy which combines art and science (Kweik, 2006, p.5).

The reforms introduced at the University of Berlin (which were underpinned by the aforementioned principles of Wilhelm von Humboldt) also inspired other universities in Germany and Europe to revisit their mission which hitherto were structured around the core function of teaching (Etkowitz & Webster, 1998, p.21). However, it should be noted that the impact of the Humboldtian model is not restricted to European universities; in fact the first two countries to accept the research paradigm with greater enthusiasm and conviction were Japan and the U.S. (Altbach, 2011, p.15). Particularly, the U.S. research model grew to become the gold standard for other universities throughout the world especially in the second half of the 20th century.

However, as Altbach (2011, p.15) notes there are some differences between the American and German versions of the research-university model. Firstly, the U.S. version is more society oriented than the German model. Secondly, in terms of governance, the Humboldtian model is predominantly collegial, while the American model has the feature of managerial self-governance as it relies on governing boards. Lastly, the German model is more hierarchical than that of the U.S.

Etkowitz (2008, p.30, 2013) heavily drawing on the influential work of Jencks & Riesman (1968) terms the emergence of research as a second pillar of HEIs, “*the first academic revolution*”. However, this transition should be considered as an ongoing process, especially in developing countries where higher education itself has a short history and developing a research culture is a work in progress. For instance in the country under consideration (Ethiopia) the first university is established in 1950 and most of the other public and private universities have a short history of a little over a decade (AAU, 2013c).

2.1.3 Making the leap to sustainability: the entrepreneurial turn

In close connection to the global shift to an increasingly knowledge oriented economy, HEIs are undergoing yet another transition which Etkowitz (2008, p.30) terms as “*the second academic revolution*”. Similar to the previous revolution, this transition is further expanding the purpose and function of HEIs by adding yet another pillar: Economic and social development mission (Etkowitz & Webster, 1998, p.39). As such, the second revolution could be considered as a mere extension of the first revolution with an additional question of, what is done with the knowledge created by the increasingly research oriented institutions?

Consequently, terminologies that signify the more systematic and practical use of research outcomes such as firm formation, patents, technology transfer are common phrases in the entrepreneurial university literature (Rothaermel, et al., 2007).

It should be noted that the entrepreneurial transition clearly challenges Newman type ‘traditional universities’ which used to consider Knowledge to be an end by itself (Kerr, 1963). It also challenges Humboldtian ideology of “Liberal education”, as most of the proponents of the entrepreneurial university model tend to prioritize hard sciences (i.e.,technology) over soft sciences (i.e.,liberal arts education) (Kweik, 2006). Reflecting on that, Kweik (2006, p.5-6) states that “*Liberal education*” is the most sidelined principle of Wilhelm von Humboldt by contemporary universities.

Before proceeding to the next section, it is essential to clarify a few points. Firstly, the classification under this section is simply intended to show how the focus of most HEIs has evolved and expanded over time. However, it is not meant to argue that every institution should follow the aforementioned phases of evolution sequentially. In other words, university could be primarily setup as entrepreneurial institutions.

Secondly, in contrast to Etkowitz (2008) and other writers who considers the current entrepreneurial turn as the inclusion of socio-economic development goal in to the mission of universities, the author believes that socio-economic impact has always been an important mission of universities. Even the very first universities of the medieval time had a purpose of bringing about socio-economic development through the preparation of members of the community that would go on to occupy key posts in the state or the clergy (Geuna, 1996). These trained members of the community can also be considered as knowledge transfer agents bridging the gap between the university and the community. That said, however, with the entrepreneurial turn the pressure to bring about societal impact in a more diverse and forceful way has escalated tremendously. In that, various forms of knowledge creation, dissemination and application arrangements (having the university at the epicenter) are being envisaged and implemented in different countries (Gibbons, Limoges, Nowotny, Schwartzman, Scott, & Trow, 1994; Lundvall, 1998; Ranga & Etkowitz, 2013).

Lastly, although making a meaningful contribution to socio-economic development is usually associated with Hard-core entrepreneurial activities such as patenting and firm formation, (see

Levine, 2009) universities could make a comparable economic contribution through more subtle entrepreneurial activities such as quality teaching and publications (see Philpott, et al, 2010, p.163-164).

2.2 What is an entrepreneurial university?

Research on entrepreneurial university has seen a significant increase in the past three decades (Rothaermel, et al., 2007). However, the growing literature is largely scattered and consensus as to what an entrepreneurial university entails is yet to emerge (Audretsch, 2003, p.2; Shattock, 2005; Barnett, 2005). Part of the confusion can be attributed to the lack of agreement on the word entrepreneurship. According to (Gibb, et al., 2012) More than hundred definitions of entrepreneurship are currently in use. The difference in studies is therefore, (at least to some extent) a reflection of this difference in conceptualizing the word entrepreneurship and its variants (entrepreneurial, entrepreneurialism). And part of the confusion might be due to the lack of common understanding as to what a university is and its core functions are (Shattock, 2005, p.16; Rinne & Koivula, 2005; Gibb, et al. 2012, p.4). Etkowitz (2013, p.506), reflecting on the difficulty of combining these two contested concepts, states “*entrepreneurial university*” is “*most unlikely combination of adjective and noun*”. Thirdly, entrepreneurialism being an evolutionary concept is a moving target; as such it is difficult to pin down (Clark, 1998; Lambert, 2009).

Having said that, Perhaps a good starting point is from the works of Burton Clark, who is widely regarded as one of the most influential scholars in the topic of entrepreneurial university (See Shattock, 2010a,b, 2005; Fuller, 2005; Williams & Kitaev, 2005; Gjerding et al., 2006; Gibbs et al., 2012; Doh, 2012, p.115). Particularly, Clark’s seminal work on institutional entrepreneurship; “*Creating Entrepreneurial universities: organizational pathways of transformation*” (1998), and its follow up study on 2004; “*sustaining change in universities: continuities in case studies and concepts*” have had a significant impact on our understanding of the dynamics of academic entrepreneurialism.

His initial book is based on the study of five universities¹⁰ in Europe which were handpicked by Clark (in consultation with his colleagues) for their success in undertaking successful institutional transformations. In his study, Clark (1998) uncovered five common elements that were true to all the institutions considered: *the strengthened steering core, the stimulated academic heartland, the expanded developmental periphery, the diversified funding base and the integrated entrepreneurial culture*. This is notwithstanding, some peculiarities that uniquely characterize each institution. He contended that these five communal elements are the *sin qua non* of successful entrepreneurial transformation. However, it should be underscored that it is not

¹⁰ i.e., University of Warwick, England, the University of Twente, Netherlands, the University of Strathclyde, Scotland; Chalmers University of Technology, Sweden and the University of Joensuu, Finland.

simply the individual elements rather it is the effectiveness of their interrelationship that will determine the successfulness of the entrepreneurial transformation (see chapter 3 for detail).

Clark's conceptualization is mainly from the perspective of institutional transformation and sustainability. As such, he contends that entrepreneurialism involves "*a willful effort in institution-building that requires much special activity and energy*" (Clark, 1998, p.4). Implied in this willful effort to create a better posture is the willingness to experiment, and assume the associated risk. As he puts it, "*taking risks when initiating new practices whose outcome is in doubt is a major factor*" (p.4). In this token, it goes without saying that entrepreneurial universities also require the discretionary power to decide on entrepreneurial pathways.

What's more Clark gives due emphasis to internal and external collaboration. Internal collaboration is of the essence because entrepreneurialism is a collective effort which has to be embraced by every member of the organization (Clark, 1998, p.4). Similarly, external collaboration is essential to diversify the funding base of the institution.

Clark's conceptualization can be summarized as follows "*an entrepreneurial university is an adaptive and enterprising social institution (consisting of departments, research centers, faculties, and schools) with the autonomy and willingness to innovate, transform, experiment, and take risk, so as to arrive at a sustainable posture*" (Clark, 1998, p.3-5).

Another prominent scholars, who has extensively written on the topic is Henry Etzkowitz. Etzkowitz, discusses entrepreneurial university within the context of the triple helix innovation model which is predominantly being used as a powerful conceptual tool to analyze national innovation systems (Ranga & Etzkowitz, 2013). According to, Etzkowitz (2008, 2013) the transition to knowledge-intensive economy necessitates the redefinition of the roles of the key actors in the knowledge production and consumption value chain: university, industry and government. Firstly, he notes that the coupling amongst the three principal knowledge actors is and/or should be growing stronger and more diversified as we delve in to the knowledge era. Secondly, as the three actors start to closely work with each other they would also start to emulate one another (2013, p.504). To exemplify, universities would start to manifest some business characteristics when they license their patented innovation or better yet engage in firm formation. In the same fashion the industry with its advanced internal training and development schemes would start to behave a bit like a university. The same can be said about government, which in addition to its responsibility of setting up a favorable regulatory environment and support provision would emerge as a venture capitalist in this dynamic relationship of cooperation and competition.

In this coevolving, reciprocal relationship, Etzkowitz (2008), puts universities at the forefront of knowledge production. This is in stark contrast to the traditional models of innovation which puts business organizations at the epicenter of technological innovation (Etzkowitz, 2013, p.489, 506). Etzkowitz (2008, p.1) argues that universities have the upper hand in leading innovation as

a result of their students. Specifically, the students who ‘*flow through*’ the system have a potential to bring in fresh ideas on a continuous basis, giving the university the comparative advantage to innovate in a more diversified and sustainable manner. Under the triple helix model of innovation Etzkowitz (2008, 2014) argues, universities will manifest entrepreneurial characteristics.

Etzkowitz (2008, p.41) identified five essential characteristics of entrepreneurial universities which he framed the norms of entrepreneurialism: *capitalization, interdependence, independence, hybridization, and reflexivity*.

The first defining feature of an entrepreneurial university, which sets it apart from the other two types of conventional universities discussed earlier (the teaching oriented medieval university and Humboldtian type Research University of the early 19th century), is its stance on the application of knowledge. According Etzkowitz (2013, p.490), entrepreneurial universities recognizes and embraces the added responsibility of bringing about social and economic impact. Put differently, entrepreneurial universities have an unwavering will to put knowledge to use and they do so in two principal ways: through the transfer of technological innovation to already established entities (business or otherwise) and through the creation of new ventures.

Capitalization of knowledge also implies the effective use of real world information (that would result from closely working with external stakeholders) to enhance disciplinary knowledge in a “*reverse linear path*” of learning (Etzkowitz, 2008, p.35; 2013, p.491). Clearly, the capitalization of knowledge (both coming in to and leaving the institution) implies a strong coupling of the university with external actors. As such “*interdependence*” is the second feature of an entrepreneurial university (Etzkowitz, 2008, p.41).

Third is “*independence*”, which echoes the much needed autonomy entrepreneurial universities require to innovate and experiment. However, independence should not be confused with isolation from the outside world for that would turn the university in to the ‘Ivory tower’ status it used to exhibit. Rather it’s about having the autonomy to make discretionary decisions and to interact with the other key actors (industry and government) in a comparable basis while at the same time systematically responding to their demands (Etzkowitz , 2008).

The balancing act of independence and interdependence will give entrepreneurial university a touch of a hybrid organization: partly responsive, partly protective. Hence, hybridization is the fourth feature. Lastly, entrepreneurial universities are expected to naturally update their internal processes in order to accommodate and effectively support the demands posed by external actors. The same can be said for the other key knowledge actors (government and industry) whose internal structure is continuously modified to better link with the university. As such “*reflexivity*” or “*reciprocity*” is the fifth essential feature (Etzkowitz, 2008, 2013).

The different features of an entrepreneurial university identified by Etzkowitz (2008, 2013) can be summarized as follows, “*an entrepreneurial university is a responsive institution with a reasonable amount of autonomy that sets its own direction and contributes to socio-economic development by capitalizing on the knowledge created through internal and external collaboration*” (Etzkowitz, 2013, p.499).

Before discussing the other definitions in the literature it is essential to compare and contrast the above two conceptualization as they have greatly influenced most of the research on entrepreneurialism. As we shall see later in this section, most of the researchers in the literature of entrepreneurial university have either cited the works of Clark and Etzkowitz and/or used it as a guiding framework. For instance, a citation index by Google scholar shows that the works of Henry Etzkowitz had produced a staggering amount of 26,411 citations, with most of the cited articles containing entrepreneurialism at least as a minor theme. Similarly, Clark’s seminal work on entrepreneurialism, has stimulated a lot of discussion in continental Europe and beyond¹¹ (Shattock, 2005, p.10; 2008, p.2; 2010, p.267).

When it comes to comparing and contrasting Clark’s and Etzkowitz’s conceptualization, the first point to note is that they have more similarities than differences. In that, both authors either implicitly or explicitly agree on the following points: responsiveness, collaboration with external stakeholders, collective entrepreneurialism, innovation, risk taking and contribution to development. Moreover, they agree on the necessity of institutional autonomy, supportive leadership, organizational structure and culture.

However, some considerable differences are also noticeable in the way they approached entrepreneurialism. Clark, approached entrepreneurialism from the perspective of; how universities go about sustaining their existence in a continually changing environment. As such, his starting point was the university and its internal setup. He therefore focused on how the internal elements or units should be aligned to support one another. In other words, although external parties were considered in Clark’s illustration, the primary unit of analysis was the internal dynamics of the university.

On the other hand, Etzkowitz approached entrepreneurialism from a wider perspective of the triple helix model of innovation where the university is one actor. As such he didn’t delve sufficiently in to the particularities of the internal dynamics of an entrepreneurial university. As Etzkowitz himself concedes, “*users of the triple helix model often speak of the three key parties (Government-Industry-Academia) of innovation at a more general level without going deeper to the level of sphere-specific actors*” (Ranga & Etzkowitz, 2013, p.242).

Secondly, again due to the fact that the triple helix model is the overarching umbrella for Etzkowitz’s conceptualization, the focus is more on hard innovation (patenting, licensing and

¹¹ Clark’s first book on entrepreneurial universities was the main theme of the OECD IMHE, General Conference in 2000.

firm formation) rather than soft innovation. However, since Clark's focal point was sustainability of universities, a wide range of entrepreneurial initiatives including soft innovations such as innovative and responsive educational programs are included. A classical example of this is one of Clark's case universities (i.e., Makerere University), which successfully transformed itself mainly through responsive educational programs (Clark, 2004, p.102).

Their third difference is the relative emphasis they gave to students. In that, although both recognize the potential contribution of students in entrepreneurial transformation, Etzkowitz (2008), considers the students flowing through the system as invaluable assets of innovation that takes the university to a whole different level of innovativeness. Whereas, in the case of Clark, the focus was on faculty entrepreneurship which he calls "*the academic heartland*".

Barnett (2005), is another influential scholar who made a significant contribution to the idea of a university in general and entrepreneurialism in particular. He gives due emphasis to risk taking behavior of entrepreneurial universities. As the individual 'entrepreneur'¹² of the 18th century was uniquely characterized by his/her risk-taking propensity, so are entrepreneurial universities who want to transform themselves in a changing environment. However, it should be noted that the entrepreneurial risk in a university setting might be far reaching than the mere financial consequence often epitomized. As Barnett (2005, p.56) points out In addition to the financial risk involved "*The university may risk its reputation, its intellectual capital, its position, its ethos, its educational character, its role as a cultural good and so on*".

Moreover, Barnett acknowledges the fact that entrepreneurialism could take different forms depending on the context. Particularly, he identifies four innovation spheres that entrepreneurial universities could occupy depending on their entrepreneurial motive and the state-market dynamics: *civic entrepreneurialism, hesitant entrepreneurialism, unbridled entrepreneurialism, and curtailed entrepreneurialism* (Barnett, 2005, p.57).

In his four quadrant illustration (which has hard and soft entrepreneurialism in the y-axis and open and controlled market on the x-axis), "*civic entrepreneurialism*" represents the top corner in the left hand side where there is fewer regulatory requirements from the state and the university is motivated to engage in innovative practices primarily for non financial reasons (Barnett, 2005, p.57). In this quadrant the university put its reputation in the line, should the entrepreneurial initiatives fail to materialize. Secondly, "*hesitant entrepreneurialism*" is a scenario in which an entrepreneurially motivated university is operating in a regulated environment. In this quadrant *HE is considered as a public good*. In this instance Barnett posits institutions will be hesitant to engage in entrepreneurial practices despite their strong motivation to do so (Barnett, 2005, p.58). The third quadrant represents an economically motivated

¹² Shattock (2010b, p.163), traces the original definition of entrepreneur to the French word 'entrepreneur', which refers to individuals who used to rent a theatre/concert hall expecting sufficient number of tickets will be sold, hence assuming the associated risk.

entrepreneurial university operating in a relatively free market condition. He frames this “*unbridled entrepreneurialism*”. The last quadrant (“*curtailed entrepreneurialism*”) represents an entrepreneurial university primarily motivated by financial incentives but operating in a relatively regulated market (Barnett, 2005, p.59). Similar to the second quadrant, in this quadrant entrepreneurial practice will be significantly limited because of the states intervention.

However, it should be noted that, as Barnett, (2005, p.59) himself concedes these innovation spheres are fuzzier in real life and that an entrepreneurial university could occupy more than one of the quadrant at the same time.

For Shattock (2010b), entrepreneurialism is about creating institutional distinctiveness by assuming the associated risk. Moreover entrepreneurialism is not merely driven by financial motives; equally important is what is done with the income generated to keep the momentum of innovativeness going in the university. As he puts it

Entrepreneurialism in a university setting is not simply about generating resources, although that represents an important element, but is also about generating activities that may be funded in innovative ways, and may involve financial or reputation risk. These activities may either be in response to anticipated and/or particular market needs, or are driven by the energy and imagination of individuals; in combination, they create a distinctive entrepreneurial profile. p.164

It can also be observed that Shattock adopts a broader definition of risk that is consistent with Barnett’s illustration described earlier.

Doh (2012) pays special attention to the role of universities in combating poverty in the context of developing countries. To that end, he identifies universities engagement with the local community as an important attribute of entrepreneurialism. In light of this he extends the triple helix model of innovation developed by (Etzkowitz & Leydesdorff, 1995), to quadruple helix with the added dimension of the community. His main thesis is that universities in developing countries could make a meaningful contribution to sustainable socio-economic development by actively engaging with the rural community and other less formal and smaller groups in the society. As such, the community should not be subsumed under industry rather it should be treated as a separate helix in its own right.

This perspective is especially relevant for this study as it is undertaken in a developing a country with relatively similar contextual realities to the description of (Doh, 2012). For instance, the industry in the country under consideration (Ethiopia) is not as developed as the industry in the developed countries (Gebreeyesus, 2013). As such, it might not act as a reliable source of diversification of funding.

In a nutshell, the features of entrepreneurialism identified by the aforementioned scholars and several others (which will not be discussed here for the sake of space and conceptual

homogeneity¹³) are summarized under table 2. As can be seen in the table, a combination of the following attributes are frequently cited by most of the scholars: *strategic direction, distinctiveness, self reliance, risk taking, proactive, interconnectedness, diversification of funding, development periphery, entrepreneurial ethos, capitalization of knowledge, regional engagement, socio-economic impact.*

Table 2 features of entrepreneurial university

Conceptions of entrepreneurial university	Authors
Strategic direction	Gjerding et al., 2006; Kirby, 2006; Gibb, et al. 2012
Distinctiveness	Shattock, 2005, 2009a, 2010a, 2010b
Self reliance	Clark, 1998,2004; Shattock, 2005, 2008, Gjerding et al., 2006
Risk taking	Etkowitz, 2008; Clark, 1998,2004; Shattock, 2005, 2008, Barnett, 2005; Gjerding et al., 2006; Williams, 2009
Proactive	Barnett, 2005; Clark, 1998,2004,
Interconnectedness	Etkowitz, 2008
Entrepreneurial ethos/ collective entrepreneurialism	Etkowitz, 2008; Clark, 1998,2004; Gjerding et al., 2006; Kirby, 2006
capitalization of knowledge (technology transfer, patenting, licensing, firm formation)	Kirby, 2006; Etkowitz, 2009a, Shattock, 2009b
Third mission (regional engagement, socio-economic impact)	Kirby, 2006; Etkowitz, 2008, Shattock, 2009
Diversification of funding	Gjerding et al., 2006
Development periphery (research centers, incubators)	Gjerding et al., 2006
Internal dynamics (structure, support system, interdisciplinary collaboration)	Gibb, et al. 2012; Etkowitz, 2008; Clark, 1998,2004; Gjerding et al., 2006

2.3 Entrepreneurial university: Inhibiting factors

Despite the vested interest from various stakeholders (national and international) to make universities entrepreneurial, and the increasing ideological and practical support channeled towards them, most HEIs remain to be encapsulated in their traditional mode of thinking and practice, which begs the question, as to what impediments nullify the entrepreneurial initiatives of universities?

¹³Most of the publications on academic entrepreneurship refer to one or more of the features identified by the pioneers described previously, rather than something different see (Table 2).

In trying to answer this fundamental question we should acknowledge the complexity associated with building an entrepreneurial university. Indeed taking an entrepreneurial leap is easier said than done. As Kirby (2006, p.559) notes, “*Universities are not the most entrepreneurial of institutions*” for some of their inherent characteristics are in constant tension with entrepreneurial behavior.

Shattock, (2010b, p.163) (based on a case study in three universities) cites four intrinsic traits that impede entrepreneurialism: *the state, excessive bureaucracy, organizational culture, and lack of strengthened steering core*. Shattock (2010b) argues that the state should give institutions sufficient room to self manage their funds. Clearly, in the absence of such financial autonomy institutions will lose their ability and even willingness to test and experiment on innovative pathways. Moreover, although reduced funding might create the impulse for diversifying funding base, if it is not within reasonable limits it may have a detrimental effect in resuming conventional operation let alone stimulating entrepreneurial initiatives.

Second to that, he points to the instrumentality of supportive organizational culture. Indeed, top management support and the heartlands readiness are of the essence for the innovative practices to become the norm rather than the exception (Shattock, 2010b). Third, he mentions the existence of excessive procedures as a roadblock to entrepreneurialism in most universities. Particularly, long and bureaucratic procedures will inhibit the much needed bottom up initiatives from materializing (Shattock, 2010b). Lastly, the lack of “*strengthened steering core*” is mentioned by Shattock, as a common barrier to institutionalizing entrepreneurialism. Drawing on Clark’s (1998, 2004) argument, Shattock advocates a blend of managerial and collegial steering unit that promotes new and innovative approaches while keeping core academic values intact as plausible solution (Shattock, 2010b, p.173).

Similarly, Currie, De Angelis, de Boer, Huisman, & Lacotte (2003), (based on a case study of four universities in four different countries) identified a number of inhibiting factors which mainly center on, academics negative perception of entrepreneurialism in relation to the other core missions of a university, such as, “*Threat to traditional university values*”, “*Threat to...curiosity driven research*”, “*[becoming] a slave to somebody else’s idea*” (p.66). Lastly, and even more comprehensively, Lambert (2009), made an extensive study on inhibitors of entrepreneurialism in a university setting by considering 27 cases from several European countries. Lambert (2009, p.146-147), cites “*Bureaucracy, state interference, lack of resource, motivation, entrepreneurial competence, personnel rigidities, cultural difference with the industry*” as major roadblocks of entrepreneurialism.

2.4 Arguments for and against entrepreneurialism

2.4.1 Arguments against entrepreneurialism

The entrepreneurial university paradigm is a contested concept in the realm of HE. This is to mean that opinions are divided as to whether it is a natural and healthy transition of universities and or a detrimental pathway that should be controlled.

Of those who strongly expressed their skepticism about the ongoing entrepreneurial transition, Slaughter is arguably the most influential. In her landmark book with Leslie, “*Academic Capitalism: Politics, Policies, and the Entrepreneurial University*” which was published in (1997) and in the follow up book in 2004, with Rhoades, “*Academic Capitalism and the New Economy: Markets, State, and Higher Education*”, Sheila has argued as to why entrepreneurialism is a dangerous pathway that should be controlled, if not, reversed.

Their main thesis is that as we are moving to a knowledge based economy, HEIs are increasingly becoming profit oriented, so much so, their distinction with business organization is getting extremely slim. They assert that financial motives are superseding academic values as a major decision making criteria within academic institutions (Slaughter & Leslie, 2001; Slaughter & Rhoades, 2004). Major decisions, such as type of research to be conducted, educational program to be offered, the way it is offered, and to whom it is offered, they argue, are all increasingly judged in light of short term financial returns, giving academic institutions the touch of a “*venture capitalist*” (Rhoades, & Slaughter, 2004, p.45).

They state that a new regime of knowledge is unfolding; a regime of knowledge production and consumption, which is characterized by an interconnection of higher education and for profit institutions; one that is driven by a neoliberal state that promotes (through financial means and discourse) and legitimizes (through polices/regulations) revenue generation within academia (Slaughter & Leslie, 2001). And one that increasingly considers HE as a private good. In this new regime, they argue academics are being sidelined, while the number and significance of “*support professionals*” (*neither faculty members nor administrators*), and managerial administrators is growing (Slaughter & Rhoades, 2004, p.50).

They cite three main adverse consequence of such profit orientation in academia: Deterioration of quality, widening of inequality, the abandoning of some disciplines.

To begin with quality, Rhoades, & Slaughter (2004, p.50) argue that too much focus on revenue, in other words cost reduction, is negatively affecting the quality of education delivered. As an example they provide the increasing use of “*contingent professors*”¹⁴ and graduate students for offering courses rather than tenured professors (Slaughter & Rhoades p.43). In addition to that, they mention the diminishing involvement of the academic staff in curricular decisions as a contributing factor for quality decline. As they illustrate using online and distance education example

¹⁴ Slaughter & Rhoades (2004, p.50), define Contingent professors as “*professors who may be full-time but are not on the tenure track*”.

We are moving toward the establishment of “virtual” educational assembly lines, with full-time faculty providing the content but non-faculty professionals and part-time faculty playing several roles—from designing the platform and the format for the class, to delivering the curriculum, to providing advice and technical assistance to students, to assessing the students, and to the program as a whole. (P.51)

Lastly, they cite the shift to output-oriented approach to quality management(i.e., test scores), which gives little regard to internal quality enhancement mechanisms, as yet another contributing factor for the deterioration of quality. They contend that “*this is the direct outcome of the lobbying effort of proprietary universities that simply could not meet the old requirements*”. (Slaughter & Rhoades, P.46)

Secondly, they argue that the entrepreneurial paradigm is exacerbating the Inequality problem rather than reducing it. In that they assert the new delivery mechanisms (online, distance, blended) which are being used by entrepreneurial universities, are only improving the “accessibility” of education to the already educated part of the community rather than expanding “access” to the underrepresented population such as low income group. They reinforce their claim by citing a statistics from U.S. Department of Education, which shows that people who are capitalizing on these new educational pathways are “*more likely to be Anglo*”. (Slaughter & Rhoades P.44).

The third major criticism against entrepreneurialism raised by Slaughter & Rhoades (2004) is the low attention some fields, which are presumed to have low immediate financial return, are getting. This is true to liberal arts educations which are although desirable, especially in terms of nurturing all rounded personality, does not necessarily lead to an immediate cash flow (Bok, 2003, p.17). Slaughter & Rhoades (2004, p.41) assert that the continuing neglect of the aforementioned fields runs counter against the need of the community at large.

In a similar fashion a number of other researchers have argued against the transition to entrepreneurial university (see Chan & Fisher, 2008; Levine, 2009; Marginson & Considine, 2000). The main arguments often being the fear that long standing academic ideals (such as critical reflection and disinterested-research) will give way to economic motives. As such, critiques argue, the entrepreneurial orientation will adversely affect teaching, research (particularly basic research) and the advancement of knowledge in general (Wellen, 2009).

2.4.2 Arguments for entrepreneurialism

This part addresses what factors necessitated the transition to entrepreneurial paradigm along with why it is a step in the right direction for HEIs.

Driven by the global move to knowledge based economy, the idea of ‘Entrepreneurial University’ has become and for good reason, the recent “buzzword” in the realm of HE. Several attempts have been made to explain the impetus for the shift in ideology and approach amongst

HEIs. Perhaps one of the most comprehensive illustrations is provided by Clark (1998). In his landmark book “*Creating Entrepreneurial Universities*” Clark argues that the demand-response imbalance between the environment and the universities is the main driver of entrepreneurialism. Clark (1998) posits the environmental pressure is growing in breadth and depth that traditional universities are not able to keep pace. The shift to entrepreneurial approach is therefore the *sin qua non* of adaptability. Four major sources of imbalance have been identified by Clark (1998, p.129-131); namely, *massification, increasing expectation from stakeholders, complex need of the labor market, and unprecedented knowledge expansion.*

The first factor has to do with the global move from elite to mass higher education which not only implies a higher number of students but also a more diverse student body. Clearly, this requires a structural adjustment at a macro (system) and meso (institutional) level (1998, p.129). The second factor that is forcing universities to revisit their traditional stance is the increasing expectation of stakeholders. Now in an unparalleled way to their entire history of existence, universities are confronted with more expectations such as quality, efficiency, accountability, and regionally engagement. Ironically, such expectations are looming in the face declining public financing. As Clark (1998, p.146) puts it, the “*do more with less money*” slogan has foot hold in many countries. Thirdly, in relation to the global transition to a knowledge-based economy, employers require a continuous training, and retraining of their employees, which is piling yet another pressure in universities (Clark, 1998, p.130). Lastly, the unprecedented advancement of knowledge which in some cases is transcending the ability of the universities to respond is also another source of demand-response imbalance.

The only way to cope up with this multifaceted environmental pressure is therefore to respond entrepreneurially (Clark, 1998; Gibb et al., 2012). Similarly, Hannon (2013) delving in to more detail regarding the environmental pressure HEIs are facing, asserts the urgency of entrepreneurial response.

Etzkowitz (2008), on the other hand connects the entrepreneurial shift with the emergence of the knowledge economy which puts HEIs at the epicenter of national innovation systems. According to Etzkowitz (2008), it is the recognition of the socio-economic development responsibility of a university (by external stakeholders and the university itself) that is driving the entrepreneurial transformation.

Shattock, (2005, 2008); Slaughter & Leslie, (1997, 2001); Slaughter & Rhoades, (2004); Marginson & Considine, (2000); and Chan & Fisher, (2008) all attribute the global decline of state funding as the major impetus for the emergence of academic entrepreneurship.

For, Bok (2003, p.10), however, it is not only the reduced state funding that induced the increasing entrepreneurial orientation of universities, but also “*the rapid growth of money-making opportunities*” that intensified the process of commercialization.

Although, the increasing external pressure (underfunding, increased stakeholder's expectations) has been, the predominant force behind entrepreneurial transformation in most countries, entrepreneurialism is an idea that can be argued for in its own right¹⁵. This is to mean that, entrepreneurialism should be sought for even in the absence of such apparent external pressure as underfunding, for it has a wide range of benefits to the society as a whole. Among other things, Staff and students infused with entrepreneurial spirit could contribute to the advancement of knowledge, addressing unemployment challenges, and better standard of living.

The researcher's position

Clearly, the evidence presented in the previous section, shows that entrepreneurial transformation is simply too good to ignore and too big of a force to stop. However, the arguments against entrepreneurialism are not without merit either. It is therefore of high importance to take great care while embarking on entrepreneurial transformations to avoid being consumed by market forces.

In this regard, perhaps the first important point to note is that HEIs need to be selectively responsive to environmental pressure and be so by using academic ideals as the overriding criteria, this will prevent, what Clark, (1998, p.139) calls the "*shopping mall effect*". The second point is the allocation of the enhanced financial capacity that is associated with entrepreneurial activities in a way that fosters the complementarity of the different missions (teaching, research, and community services) and fields (soft & hard) that coexist in universities "*in a dynamic relationship of cooperation and tension*" (Etzkowitz, 2008, p.29). To elaborate, the additional money should be used to strengthen the quality of teaching, research and further entrepreneurial practices (Clark, 1998, p.5). This may entail cross subsidizing other relevant but not necessarily profitable fields; strengthening of the institutional infrastructure (i.e, library, lab) ; attracting high caliber professional (students, staff) and financing innovative projects of students and staff.

Moreover, establishing a nexus between applied and basic research is essential. In what Etzkowitz (2008) frames "*reverse linear path*" of learning; entrepreneurial universities could bring in ideas and problems from the community, as much as they transfer their ideas to the community. Hence, this exposure to real world problems could enrich disciplinary knowledge and basic research. Similarly, applied researchers could build on the outcome of basic research, as knowledge is increasingly polyvalent¹⁶ (Etzkowitz, 2010, p.2). In the same token, a synergetic relationship could be established between research and teaching (Etzkowitz, 2008).

The aforementioned suggestions are not only important to resolve possible resistance from academics but also to fully capitalize on the benefits of entrepreneurial transformation.

¹⁵ For instance in the case university (AAU) the state funding has in fact been increasing over the past few years, nonetheless, entrepreneurial transformation is highly desirable as argued in (see section 1.2.1).

¹⁶ Knowledge has simultaneously theoretical and practical, patentable and publishable implications.

Chapter Three: Analytical framework

In order to help guide this research the five essential elements identified by Clark (1998), and most importantly, their interplay will be used as a conceptual framework. To this end, the chapter is divided into seven main sub-sections. While the first five sub-sections discuss the elements of the framework and other pertinent issues in relation to them, the sixth sub-section will discuss why Clark's illustration is chosen as a guiding framework. Lastly, the chapter concludes by reflecting on some of the differences between the purpose and approach of this research and that of Clark (1998).

3.1 The strengthened steering core

Perhaps it is essential to provide an operational definition of "the strengthened steering core" at this stage, to avoid possible misunderstandings. According to Clark (2004, p.175) the strengthened steering core corresponds to "[the] administrative backbone stretching from central bodies to major faculties to baseline departments and institutes".

The word '*strengthened*' should be emphasized as it implies that the university has the capacity to set its own direction and manage it effectively, which calls for some discretionary power. As such, '*the Autonomy of the steering core as necessary condition for change*' will be discussed under this section. Additionally, the inherent tension that exists between the new managerial values associated with entrepreneurialism and the existing collegial academic norms that uniquely characterize universities will be discussed. Lastly, some structural issue (i.e., tall or flat; centralization or decentralization of power and type of departmentalization) in the context of entrepreneurial university will briefly be presented.

3.1.1 Autonomy as a necessary but not sufficient condition of entrepreneurial transformation

As Clark (1998, p.8), notes entrepreneurial universities are "*stand up*" universities that relentlessly strive to create a positive institutional posture. They are bold in their action and approach; they prioritize the risk of change over the risk of maintaining the status quo (Clark, 2004, p.170).

In this endeavor of creating institutional distinctiveness, entrepreneurial institutions clearly need to have autonomy (Shattock, 2010b; Etzkowitz, 2008). Autonomy to decide on those unconventional ideas, which are although promising, might have a certain level of risk attached to them; autonomy to support initiatives that may take the university outside its comfort zone. In the absence of such autonomy, the will to innovate, experiment and test uncharted pathways will be severely limited.

That said however, it should be noted that autonomy by itself is not a sufficient condition for change. As Clark (1998) states

A formal grant of autonomy from patron to institution does not guarantee active self-determination; autonomous universities may be passive institutions. They may live for the past rather than look to the future. P.5

Hence, equally important in university transformation process is the need and urgency to transition in to a more sustainable academic and financial position. The entrepreneurial orientation of the steering core can be demonstrated in terms of creating the enabling environment to spur innovations. This could entail creating suitable organizational structure, providing financial and technical support and establishing incentive systems, among other things.

Lastly, a point Worthy of note in autonomy-change relationship is the fact that they mutually reinforce each other. In that, the rewards that institutions could possibly reap from their transformative activities will significantly enhance their financial stand and consequently, their independence from external patrons. Similarly, the higher autonomy attained can be utilized to undertake more entrepreneurial initiatives; this could ultimately lead to what Clark frames a “*steady state of change*” (Clark, 2004, p.178-179).

3.1.2 Managerialism versus collegiality

Perhaps one of the most challenging tasks in building an entrepreneurial university is the act of balancing the new managerial values with the long standing collegial values (Clark, 2004, p.83; Kweik, 2012). Universities are collegial institutions in the sense that the academics regardless of their position in the organizational hierarchy or discipline consider each other as equals (Birnbaum, 1998, p.87-89). This is in sharp contrast to business organizations where there is often a considerable variation and most importantly recognition of authority along the chain of command. However, the increasing complexity of the external environment has necessitated the use of professionals with managerial expertise at different levels in the hierarchy. As a number of scholars noted (Birnbaum, 1998, p.7; Altbach 2009, p.170; Clark, 2004, p.84), “*HEIs are far too sophisticated to be managed by amateur academics*”.

However, with the growth of administrative experts at various levels in the university, two distinct groups have emerged: the administrators and the faculty, each with its own values systems and source of power. In terms of power, the former heavily relies on positional power, while the latter is more dependent on professional power creating a “*dualism of authority*” (Birnbaum, 1998, p.10). Secondly, with respect to core values, the managers focus on institutional efficiency and effectiveness and as such tend to evaluate each activity (educational program, research and services) in terms of the associated cost and potential (financial and non financial return). This is often in constant tension with some of the long-standing and core academic values of the faculty such as ‘*curiosity driven research*’ or the offering of some

socially relevant programs with no immediate cash flow (Slaughter & Leslie, 2001; Slaughter & Rhoades, 2004). The difference between managerial value of administrators and academic values of faculty can also be explained using mode 1 and mode 2 knowledge production (see section 3.3.3 for detail)

However, according to Clark (2004) both are essential in building an entrepreneurial university. For instance, if collegial values are disregarded, a stiff resistance from the heartland might arise, without whom the change is inconceivable. Conversely, if collegial values are too strong, the university might slump in to the traditional mode of thinking. The question is therefore how to bring these two values in to alignment?

In this regard, Clark (2004) commends the involvement of members of the heartland in the steering core along with professional managers. This could entail the inclusion of academics in various committees which are built in and around the center (as was the case in Warwick) or simply the delegation of authority to middle and lower levels (Clark, 2004, p.84-85). Additionally, the inclusion of academics in units, which Clark frames “*the expanded development periphery*” is of paramount importance in reducing the gap between the administrators and the faculty and ultimately creating a sense of togetherness. Such sense of togetherness should not be taken lightly, as the objective is creating a university transformation driven by “*collegial or cooperative entrepreneurialism*” (Clark, 2004, p.45). In close connection to the point made above the next subsection discusses the type of organizational structure suitable for proactive universities.

3.1.3 Structural issues: hierarchical levels, distribution of power, and departmentalization

Another pertinent point in relation to building an entrepreneurial university is deciding on structural issues i.e., hierarchical levels, distribution of power, and departmentalization.

Firstly, when it comes to hierarchical levels, entrepreneurial universities could adopt relatively tall or flat organizational structures depending on environmental conditions (Clark, 2004, p.83). For instance, of the five case universities of Clark (1998), two of them (Warwick and Joensuu) underwent successful transformation by adopting a relatively flat organizational structure, which allowed the departments to directly interact with the central administration of the university. On the other hand, three of the remaining case universities (Strathclyde, Twente, Chalmers) opted for a relatively tall organizational structure with three successive layers composed of central administration at the top followed by faculties at the middle and departments at lower levels (Clark, 2004, p.84).

However, when it comes to the relative distribution of power there is a general trend towards sharing of authority. For instance, all the universities Clark originally studied used decentralization with the exception of Warwick (Clark, 1998, p.21). Even in the case of Warwick, an effort to empower the academic staff was made by including the academics in various key committees. As Clark (1998) points out “*This web of interlocked central committees*

[became] the heart of Warwick's capacity to steer itself" (p.21). Whereas, in the universities that followed a relatively tall organizational structure an attempt to delegate authority with commensurate amount of responsibility was made at all levels. Such delegation of authority is pivotal in creating a sense of ownership amongst members of the heartland and ultimately building an entrepreneurial culture.

Lastly, with respect to the type of departmentalization, the most common form in Clark's case universities was "matrix structure"¹⁷. This is simply because entrepreneurial universities, establish boundary spanning units, which Clark frames the "development periphery", *that cross-cut the structure horizontally* (Clark, 2004, p.84). Although, with such a matrix structure there is always a possibility of conflict of authority (Pinheiro, & Stensaker, 2013), if managed carefully the benefits are far reaching (Clark, 1998). Among other things, a matrix structure, through the development periphery, contributes to; diversification of funding, cross disciplinary collaboration¹⁸, improved linkage with the external world, and improved collaboration between the steering core and the academic community (Clark, 1998, p.139). What's more, it contributes to efficient use of resources (Pinheiro, & Stensaker, 2013) and organizational flexibility (Clark, 1998). In short a matrix structure provides the platform for university wide transformation.

3.2 The stimulated academic heartland

The second common element that Clark (1998) observed in all the case universities which underwent successful transformation is a motivated academic staff (which he called the "*stimulated academic heartland*"). In line with that, the section will start by providing an operational definition of the "*academic heartland*". Secondly the instrumentality of the academic community to the whole transformation process will be reflected up on. Lastly, the implication of disciplinary variance in the transformation process will be discussed.

3.2.1 Definition

According to Clark's classification the academic heartland refers to the academic staff who reside in departments and/or faculties that house related disciplinary (and at times multidisciplinary) fields (Clark, 1998, p.7; Clark, 2004, p.177). In this research however, a more expanded definition of "*academic heartland*" that gives recognition not only to academic staff but also students is employed.

¹⁷ The matrix approach refers to the combining of two aspects of departmentalization simultaneously in the same part of the organization (Daft, 2010, p.254; Clark, 1986, p.31). In the case of entrepreneurial universities the horizontal classifications refer to the project oriented units of the development periphery while the vertical classification refers to the disciplinary based groupings of department (Clark, 1998, p.138).

¹⁸ The matrix structure helps the university transition in to mode-2 knowledge production (i.e., problem oriented and interdisciplinary research) (Clark, 1998, p.139)

3.2.2 The role of the academic heartland in university transformation

Once again, it is essential to revisit some of the peculiar features of academic institutions in order to clearly understand the importance of involving and empowering the academic staff in the university transformation process.

A good place to start in this regard is the “*bottom heaviness*” of academic institutions (Clark, 1998, p.4). This is to mean that unlike business organization; most of the power in academic institution is concentrated at the lower levels, i.e., in faculties and departments within them. As Clark (1983, P.43, 133) notes, at times, faculties are very powerful, so much so, they can even stand alone. However, it should be noted that this doesn’t mean there is less positional power as we go up the organizational hierarchy; rather it just means that the academics have a strong professional power emanating from their expertise.

Moreover, academic institutions have long existed as (and are still to an extent) collegial institutions (Clark, 1986, 2004); and as a result they tend not to consider the leaders as their superiors, at least in the strict sense of the term, rather they consider them as their equal who are there to serve them. As Birnbaum (1988, p.89) states” [in a collegial institution] *the administration is understood to be subordinate to the collegium and carries out the collegium’s will*”.

Hence, in an institution with such peculiar features a reform that follows a firmly top down approach is doomed to fail. As Clark (1998) states

It is here in the many units of the heartland that promoted changes and innovative steps are most likely to fail. If the basic units oppose or ignore would be innovations, the life of the institution proceeds largely as before. p.7

Yes, leaders could propose innovative ideas that could be of practical relevance but the academic staff should have a genuine space to critically evaluate the proposed idea. More importantly, academics should be empowered to propose innovative ideas of their own and develop it collaboratively. As (Clark, 1998, p.4, 85; Etzkowitz, 2008, p.27) state Entrepreneurial universities prioritize collective entrepreneurship over individual entrepreneurship.

The benefit of creating a platform for collective entrepreneurship is multifold; firstly, it will allow the institution to tap in to the expertise of its staff and secondly, the coming together of academics from different disciplines, will provide an excellent opportunity for cross-fertilization of ideas, which will enhance the innovation capacity of the institution (Etzkowitz, 2013c) and thirdly, the involvement of the academics will create a sense of ownership and ultimately an entrepreneurial culture (Clark, 1998, 2004).

In the same token, the importance of students in institutional entrepreneurship process can be argued. In addition to being an excellent source of innovative idea, students could play key role in transforming the knowledge produced within the university in to an actual product and/or service which could ultimately benefit themselves, the university and most importantly the community at large.

Contemporary research on entrepreneurial university also gives due recognition to the role of students. A notable example in this regard is Ezkowitz (2008, p.1), who argues that students give universities the upper hand in terms of innovation, as compared to the other two key actors of innovation (industry and government) in the triple helix model of innovation.

Similarly, Clark (1998, p.4), recognizes the role of students in fashioning entrepreneurial transformations. The benefit of involving students in the entrepreneurial transformation process was also practically demonstrated by Some of Clark's case universities (such as Chalmers and Twente).

3.2.3 Disciplinary variance and the spread of entrepreneurialism

As discussed above, the academic heartland should readily accommodate the new entrepreneurial values for the transformation process to be successful. However, achieving entrepreneurialism across all departmental units at the same pace and depth is a very tall order. Understandably, HEIs are made up of a wide range of distinct disciplinary fields, and this has its own bearing on the response time of each disciplinary unit. To be more specific, for some (such as, science and technology fields) it might be easier to transform their knowledge in to a tangible product or service. While for some of the others (such as, humanities) such a link might be difficult to visualize let alone realize (Clark, 1998, p.78).

In addition to the inherent disciplinary differences, the favorableness of the environmental condition may impact, the pace of institutionalizing the new entrepreneurial mode of thinking across different disciplines. For instance, in a country where the industry is underdeveloped and financially handicapped, diversifying the funding base through industry collaboration might be difficult. A typical example of this is (Makerere University, Uganda) where, social science department raced ahead, compared to its counterparts in technology related departments, in terms of diversification of funding (Clark, 2004, p.177).

Thirdly, the size of university might also affect the pace of responsiveness across the disciplinary units. In that, in smaller universities more often there is a relatively balanced spread of entrepreneurialism. On the other hand, in larger universities, where faculties have a tendency to stand-alone, it is difficult to achieve a unified character and hence there usually is uneven spread of entrepreneurial habits (Clark, 1998, p.142).

A point worthy of note in facilitating an even-spread of entrepreneurialism across different disciplines is recognizing that different disciplines might take different entrepreneurial pathways. For instance, for social science and humanities it might be easier to provide consultancy service than engage in firm formation. Hence, “*one size fits all*” approach should be avoided (Clark, 2004, p.85; Philpott, et al, 2010, p.163-164). Secondly, cross subsidizing some of the relevant fields which are lagging behind, while at the same time rewarding some of the fields/departments that are racing ahead, is essential (Clark, 1998, p.138).

3.3 The expanded development periphery

The third essential element of an entrepreneurial university is a well elaborated development periphery (Clark, 2004). In line with that, this section will briefly discuss the purpose, function and nature of the development periphery along with the challenges of legitimizing its existence.

3.3.1 The Development periphery: purpose, functions

Put simply, the purpose of the development periphery is contributing to organizational sustainability, while at the same time enhancing the relevance of the institution to external stakeholders. Towards the aforementioned objective, the development periphery performs two primary functions. Firstly, it will enhance knowledge production within the university. This will mainly be achieved by promoting interdisciplinary collaborative (i.e., Mode 2) research and/or projects (Clark, 1998, p.139). Secondly, it will actively strive to transfer the knowledge produced by and with the university to key external parties, such as industry, community and government (Clark, 2004, p.85). While doing so, the development periphery will enable the university to diversify its funding base.

What’s more, by jointly working with the external stakeholders, the development periphery could contribute to the objective of ‘effective knowledge production within the university’. In that, members of the university might learn something of value from the interaction with their counterparts from the industry and community, which could prove to be essential not only to applied research but also basic research. As Clark (1998, p.138) states “*[the expanded development periphery] can even effect reciprocal knowledge transfer: the university learns from outside firms as the companies learn from the university.*”

3.3.2 The Development periphery: Types

With respect to the nature of the development periphery it may either take the form of an administrative unit and/or an academic unit (Clark, 2004, p.84-86).

The former basically refers to various offices within the universities that are established with the aim of coordinating linkage with a wide range of external stakeholders. As such the actual task of the resulting project or educational program is carried out by the academic staff in departments. What the administrative units provide is the professionalized management of the

universities interaction with ever growing groups of stakeholders. The number and type of such administrative units vary from case to case. For instance, in enterprising institutions that tap in to multiple sources their number will naturally be high. Administrative peripheral units may include, but are not limited to, knowledge and technology transfer offices, continuing and distance education offices and industry liaison offices (Clark, 2004, p.84-85)

The academic development periphery units¹⁹ on the other hand, in addition to coordinating the link with external stakeholders, are tasked with actually conducting the resulting research projects or educational programs in their interdisciplinary centers (Clark, 2004, p.85). A typical example of such a development periphery is a research center.

3.3.3 Legitimizing the development periphery

One of the challenges in building an entrepreneurial university is legitimizing the existence of peripheral units alongside departments by reconciling the inherent tensions. As mentioned in the previous section part of the problem is structural. In that, the matrix structure (often followed by enterprising universities), creates a conflict of authority, since, some employees are expected to report to two superiors at the same time²⁰ (i.e., project/center Heads and department heads) (Pinheiro, & Stensaker, 2013).

Secondly, part of the tension is epistemological and cultural. In this vein, tensions could arise between, basic research vs applied research; disciplinary vs trans-disciplinary perspectives, inward vs outward orientation (Clark, 1998, p.139). Perhaps the epistemological tension can best be explained by distinguishing between mode 2 and mode 1 knowledge productions.

The theory of mode 2 knowledge production is developed by Michael Gibbons and his colleagues in 1994. The main thesis is that a new mode of knowledge production (which they coined “Mode 2”), that is broader in scope; flexible (in approach, participant, and setting); more collaborative; and application oriented has emerged starting from the second of the 20th century. This is in contrast to traditional mode of knowledge production which they framed “Mode 1” that is “*generated within a disciplinary, primarily cognitive, context*” (Gibbons, et al., 1994, p.1). Gibbons, et al. (1994, p.3-8) identified five specific features of Mode 2 that can be used to discern it from Mode 1: *Knowledge Produced in the Context of Application; Transdisciplinarity; Heterogeneity and Organizational Diversity; Social Accountability and Reflexivity; Quality Control.*

¹⁹ In addition to employing a dedicated research staff, academic peripheral units may co-opt academics in different departments.

²⁰ This is in sharp contrast to one of the principles of management put forth by the French management guru Henri Fayol i.e., “*Each subordinate receives orders from one—and only one—superior*” (Daft, 2010, p.40).

Firstly, in Mode 2 knowledge is produced in the Context of application which implies that, the intended beneficiaries of the research outcome (i.e., government, industry and/or community) are identified from the outset (Gibbons, et al, 1994, p.4).

The second feature, i.e., Transdisciplinarity has four attributes. Firstly, an evolving framework is developed and utilized within the context of the problem to be solved. Secondly, in addition to practical relevance, mode 2 research will also contribute to theoretical knowledge. However, the knowledge might not necessarily be traced to a particular discipline. Thirdly, as the framework is constructed on the spot, knowledge dissemination occurs during the course of the research and afterwards when the participants interact with other researchers to solve a new application oriented problem. Lastly, Transdisciplinarity refers to dynamism (Gibbons, et al, 1994, p.5).

The third feature is Heterogeneity and Organizational Diversity. Heterogeneity refers to the diverse perspectives raised by the participants with different educational background and experience. Organizational diversity refers to the increasingly shifting knowledge production site. i.e., from a landscape mainly dominated by universities to a distributed knowledge production that involves government offices, research and development facilities, think-tanks and other constituencies that are configured and reconfigured in different ways (Gibbons, et al, 1994).

The fourth feature of Mode 2 research is Social Accountability and Reflexivity. According to Gibbons, et al., (1994), the public is becoming increasingly keen on research outcomes and this is forcing researchers to become more socially accountable and reflexive. Lastly, all the above mentioned features have also altered the approach to quality control. That, is in the mode 1 knowledge production quality was largely evaluated from the cognitive and social norms of a discipline *i.e., from the intellectual interests and preoccupations of the discipline and its gatekeepers* (Gibbons, et al., 1994, p.8). However, in, mode 2 research where a wide range disciplinary perspectives and interest groups are entertained the quality evaluation criteria is clearly broader.

In short, the mode 2 type research espoused by the entrepreneurial development periphery and the steering core might come in constant tension with the long standing practice of disciplinary knowledge production within the institution.

Clearly, effort should be made to resolve the structural as well as epistemological tensions. In this regard (Clark, 2004) commends being selective. Understandably, a university cannot possibly respond to every environmental demand it detects²¹ (Birnbaum, 1988; Clark, 1998, 2004). A point to note here is that the overriding principle of the selection should be educational values. If financial motives take precedence over academic values, the institution could be in

²¹ For one thing, some of the environmental demands could simply be inconsistent with the purpose and strategy of the university. Moreover, some of the external demands might be in constant tension with each other.

danger of becoming more like a “*shopping mall*” (Clark, 1998, p.139), in which case a firm resistance from the academic heartland is to be expected. Hence, involving the academic heartland in the process of “*deciding which new activities are permissible and which are beyond the pale*” (Clark, 2004, p.87) is essential in legitimizing the effective existence of the new peripheral units. Moreover, as mentioned earlier establishing a nexus between applied and basic research is essential Etzkowitz (2008).

3.4 The diversified funding base

“*Diversity in financing, [...] can be regarded as a prerequisite for adaptability*” (Holta, 1995, p. 56, as cited in Clark, 1998, p.141). Indeed, financial capacity is at the heart of the universities ability to respond to the ever growing and multifaceted environmental demand. The state has shown time and again that it cannot be completely relied up on for financial needs of universities especially in the face of economic volatility.

Even when state funding is readily available, it often comes with many conditionalities attached, severely limiting the autonomy of the HEIs (Clark, 2004, p.77). Being well aware of this, entrepreneurial universities seek to find multiple streams of finance. In this regard generally universities can make use of three main source of income: primary, secondary and third stream (Clark, 2004).

3.4.1 Primary income

Primary source refers to a state’s budgetary allocation of funds to HEIs. This is the most conventional form of financing higher education, but as mentioned earlier it is generally on the wane (Clark, 2004, p.80). Consequently, proactive universities continuously seek to move away from it to secondary and third stream financial sources.

3.4.2 Secondary income

The second source is also the state but it is earmarked for research activities and hence is usually handled competitively through governmental research councils. Before proceeding to the third category it should be noted that the above distinction between primary and secondary streams holds true in countries where there is a separate governmental research council for funding research, for instance, in the UK (Higher education funding council for England [HEFCE], 2016). However, in other countries such as Ethiopia where the state fund is concurrently allocated by a single entity, i.e., Ministry of finance and economic development (MoFED), the distinction is blurred (MoFED, 2015).

3.4.3 Third stream income

The third alternative, which is collectively termed as ‘*third stream*’ is composed a wide range divergent sources (public, private; for profit, non profits; local, national and supra-national) each

with its own accompanying arrangements and needs. Clark (2004, p.78), classifies ‘*third stream income*’ in to three generic groups: *Other organized government sources, private organized sources, and university generated income.*

The first sub category i.e., *other organized government sources*, corresponds to a financial income that is generated by collaborating with local, national and even supranational governing bodies. This could include various ministries and government offices (such as ministry of transport, health, agriculture, science and technology) other than the primary and secondary state based financial providers described earlier (Ministry of Education, and research councils). As Clark (2004, p.78) states, this sub category has a lot to offer especially when state based core-funding and industry based income is low. In that, apart from the significant amount of income that could be raised (which at times even surpasses industry based income), it will help to defend against the ‘*commercialization*’ critics, as it symbolizes the relevance of HEIs in bringing about socio-economic development.

Table 3, HEIs source of income

Primary income	Secondary income	Third stream income
Core-state funding	State-research funding	Other organized government sources (i.e., ministry of science and technology)
		Private organized sources (industry based income and philanthropic organizations)
		University generate income (endowment, alumni fundraising, earned income from campus operations, tuition fees, royalty income)

Source: Compiled by Author based on (Clark, 2004, p.77-83)

The second sub-category of third stream income is called private organized sources. This alternative refers to money raised from business and professional organizations in the industry coupled with financial support received from philanthropic organizations. As Clark (2004), states the industry is increasingly becoming an important source of income for HEIs. Some of the most common forms of collaborations include training, consultancy and joint research projects (2004).

Similarly, financial support from philanthropic organizations is becoming an essential component of universities budget. Such practices have widely prevailed in USA, where state funding of higher education has been comparatively low (Marcus, 2013).

The last category of third stream income is University generated income. As Clark (2004, p.82) states this constitutes endless possibilities including, endowment funds, alumni contributions, tuition fees, campus based operations and royalty fee.

To begin with endowment funds, it refers to

An investment fund maintained for the benefit of the educational institution [...]Income from the endowment is used to cover the cost of the college or university's operations and capital expenditures, to fund special projects, or for reinvestment (Tax insights, 2015, p.2).

Endowment funds provide a viable alternative to reduce over dependence on state funding. However, it is context dependent. This is to mean that, HEIs which reside in countries which have a strong culture of philanthropic support (such as, the US and Israel) are the primary beneficiaries of this financing scheme (Teferra, 2005).

The second source of self generated income is contribution from alumni. Similarly the popularity of this financing scheme varies across regions and countries. Yet again, this seems to be more common in the US. For instance, Princeton University has managed to collect, as high as \$61,490,178 million USD in a single calendar year (i.e., 2014/15) (Princeton university, 2016).

Thirdly, universities could also self finance their operations through tuition fees. More Often than not, tuition fees are subject to a set of regulatory restrictions especially in public universities (Clark, 2004). The restriction might range from setting a tuition fee cap to prohibiting tuition fees at all. The restriction might also differentiate among different types of students.

Fourth is earned income from campus operations. This refers to various academic or non academic services that the university offers for a fee, usually within its compound. In campus Services, such as printing, photocopying, cafeteria, cinema, renting and leasing of resources all fall in this category (Clark, 2004, p.80-81). Once again, if managed properly, income from on campus services is an important mechanism of increasing the discretionary power of a university.

Lastly, universities being knowledge based institutions could generate income from their technological innovations in the form of royalty fees.

To recap, the pursuit of more discretionary power through diversification of funding base is one of the defining characteristics of proactive universities. However, the main rule remains the same: universities need to be '*selective*' in deciding which diversification scheme/s to use and with whom to collaborate. As each stakeholder group could have different and even at times, conflicting interests (Conflicting, with other stakeholders and/or conflicting with academic ethos and values), the university should be '*academically selective*'. Moreover, as outlined above,

some of the alternatives are not simply feasible in some countries and hence the context should always be taken in to account while choosing the diversification strategy.

3.5 The integrated entrepreneurial culture

The other trait that was commonly evident in Clark's case universities is integrated entrepreneurial culture. A good starting point in this regard is defining what an organizational culture is.

3.5.1 What is organizational Culture?

Culture is one of those terms in academic literature that are widely used with little consensus (Clark, 2004, p.91, Gebremeskel, 2015, p.13). This is to mean that there is a stock of research as regards culture in social science studies, particularly, starting from 1960s (Maassen, 1996, p.153), but a definitive definition is yet to emerge (DeVry University, 2012). Being well aware of this Clark (2004, p.91), describes culture "*as a generous term...difficult to pin down*". Understandably, some aspects of culture are invisible and lie deep below the surface level (Gebremeskel, 2015,p.12; DeVry University, 2012) as a result, identifying, measuring and even articulating culture is difficult (Schien, 2004, p.8). However, it is possible to trace some communality amongst the prevailing definitions. In that, most of the definitions talk about "*shared meaning, interpretations, values and norms*" in one way or another (Gebremeskel, 2015, p.10).

In this research Schein's (2004) conceptualization of culture is used as an operational definition

Culture is both a dynamic phenomenon that surrounds us at all times, being constantly enacted and created by our interactions with others and shaped by leadership behavior, and a set of structures, routines, rules, and norms that guide and constrain behavior. P.1

The reason behind adopting this definition is multifold. Firstly, it gives recognition to the role of leadership in shaping culture. This is consistent with one of the basic assumptions of this research: the strengthened steering core plays a key role in bringing about organizational transformation, particularly in helping the institution move out of '*traditional mode of thinking*'. Secondly, it underscores the fact that culture and other structural elements have the power to facilitate or constrain behavior. This is also consistent with another essential assumption of this research i.e., both the academic community and leadership need to be open to embrace the new entrepreneurial values. Thirdly, it considers culture as a dynamic process that evolves overtime. Once again this is consistent with the characteristics of Clark's case universities who have managed to successfully change their character over a decade or so to create a strong posture.

3.5.2 What is an entrepreneurial culture?

In order to define entrepreneurial culture, perhaps it is essential to revisit some of the defining features of entrepreneurialism described in chapter-2. Entrepreneurial universities are enterprising in their very nature. They seek to find and experiment on new pathways which are although risky but potentially rewarding (Kwiek, 2013, p.50; Shattock, 2005, 2008, Barnett, 2005). They seek to collaborate internally and externally (Gibb, et al. 2012; Etkowitz, 2008; what's more they are selectively responsive to environmental changes (Clark, 1998, 2004). Hence an entrepreneurial culture is a culture that embodies the aforementioned characteristics of an entrepreneurial university. Stated differently, in entrepreneurial universities the basic assumptions, values, norms and behaviors support and reflect entrepreneurial characteristics identified above such as, openness to change, risk taking, collaboration and responsiveness. As such entrepreneurial culture should not be treated in isolation from the other four entrepreneurial elements of Clark, as it is the driver and the manifestation of the other entrepreneurial elements, which are assumed to coexist in a mutually reinforcing, reciprocal relationship (Clark, 2004, p.90).

3.5.3 Developing an entrepreneurial culture

The process of cultural development, described by Clark (2004, p.90, 1972, p.178), can be portrayed using a continuum that extends from a simple idea to saga (see figure 1).

Figure 1, the development of an entrepreneurial culture



Source: Based on Clark (1972, 2004)

As can be seen above, it all starts with an idea which could entail a new and innovative way of doing things. In this regard, firstly, a space should be created to stimulate the academic community to propose their innovative ideas. Secondly, leadership should facilitate the implementation of those innovative ideas by providing the necessary financial and non financial resources.

Over time, such habits of innovation, collaboration, experimentation, and risk taking will spread across the institution, at which point the belief will transform into a culture. Here it is important to stress the role of 'real' involvement and support of the academic community in the transformation process as opposed to the mere inclusion of entrepreneurialism in various discourses of top management such as, mission statements and strategy documents. As (DeVry University, 2012, p.1) states, "*When espoused values are not confirmed by actions, the organizational culture is weakened.*" Hence, ideational as well as material support is required to induce actions and belief.

If and when the new entrepreneurial habit allows the institutions to effectively handle the increasing environmental challenge that is pouring in to it; the culture will start to possess the characteristics of a saga. According to Clark (1972, p.178)

“An organizational saga is a collective understanding of unique accomplishments in a formally organized group... it presents some rational explanations of how certain means led to certain ends.”

The organizational saga will act as source of inspiration for members of the institution and this is pivotal in keeping the momentum of change and responsiveness. Particularly, Saga is essential in creating, what Clark frames “*steady state of change*” (Clark, 2004, p.178).

To sum up, two essential lessons can be drawn from the cultural development described above. Firstly, since developing an entrepreneurial culture is an incremental rather than a radical process, takes a long time to realize. Secondly and most importantly, in order to effectively transition through the stages, commitment from management as well as staff is required. For instance in an organization where the management does not create spaces for ideas to emerge, cross fertilized, and implemented, the number of innovative ideas that would likely surface will be low. And even if some ideas emerge, they will not grow and materialize due to lack of supportive environment.

3.6 Why is the dynamics of the entrepreneurial elements so important?

The existence of each entrepreneurial element by itself does not necessarily lead to the creation of an entrepreneurial university. This has been voiced time and again throughout Clark’s books (1998, 2004). For instance, the joint effort of the steering core and the academic heartland is required to build an entrepreneurial culture. In other words, the steering core should stimulate and nurture new and innovative ideas stemming from the academic heartland and students. Likewise, the academic staff and students should be open and willing to embrace the new idea of the steering core. Similarly the support of both the steering core and the academic heartland is required for the establishment and legitimization of the development periphery. Without such support and recognition the existence of the development periphery will be short lived, even if they are established. In the same fashion the interrelationship of the other entrepreneurial elements can be argued (see table 4). As such it is the dynamics of the elements that is so important, as opposed to their mere existence, in creating and ultimately sustaining entrepreneurial universities (Clark, 1998, p.4).

3.6.1 The nature of the interrelationship amongst the entrepreneurial elements

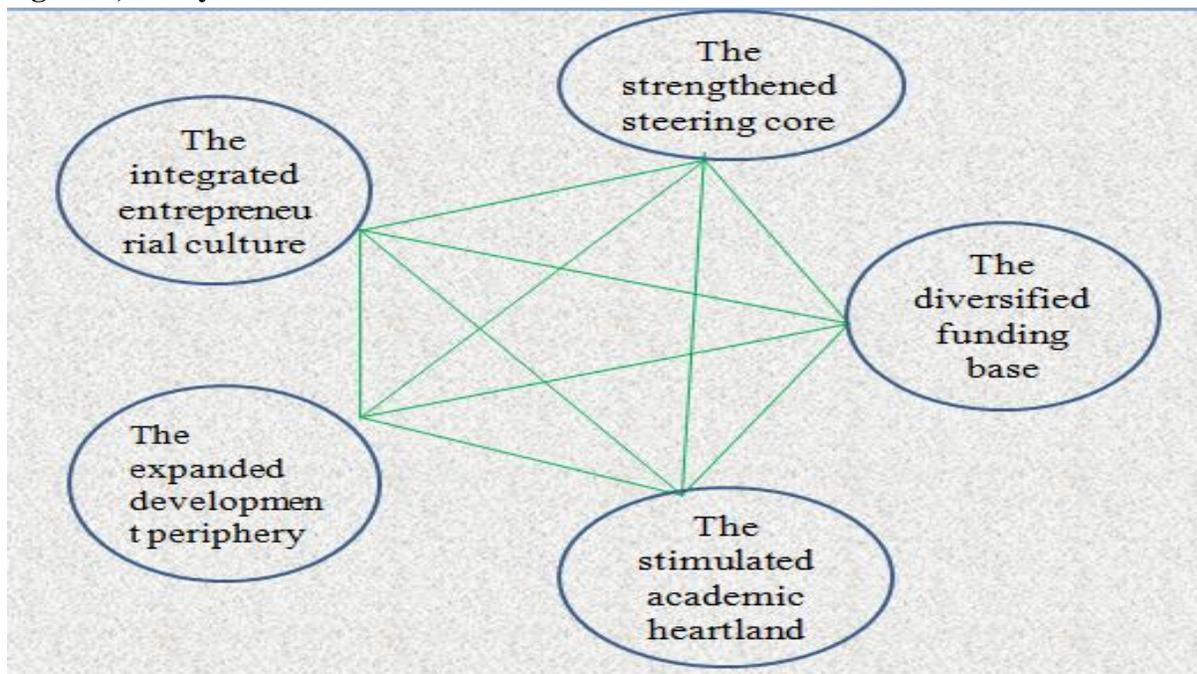
The five entrepreneurial elements which Clark framed “*the irreducible minimum*” can be considered as interacting and interdependent components of one bigger system. They are interacting in the sense that there is a continuous exchange of inputs and outputs amongst them.

They are interdependent because each element can either facilitate or impede the performance of the other. As the examples stated above show if one of the elements are missing or acting to the contrary, building an entrepreneurial university will be difficult.

Moreover, in addition to the one-to-one interaction and interdependence described above, some of the elements mediate the relationship between some of the other elements. For instance, the development periphery mediates the relationship between the steering core and diversification of funding. To elaborate, the development periphery facilitates the diversification of funding base by acting as point of interface to the external world. And the diversified funding base in turn will give the steering core the much needed autonomy to decide on distinctive entrepreneurial pathways. Similarly, institutional culture moderates the relationship between the steering core and the academic heartland (see table 4).

Visually, the one-to-one interrelationship are depicted by the direct lines between any two of the elements, where as the moderating impact of the elements is depicted by the several triangles that are formed amongst any three of the elements (see figure, 2 below).

Figure 2, Analytical framework



Source: based on Clark (1998), as customized by Hölttä (2015)

In a nutshell, the entrepreneurial elements are assumed to exist in a mutually reinforcing reciprocal relationship.

Table 4, the dynamics of the entrepreneurial elements

Elements	Relationship
Steering core with the academic heartland	<ul style="list-style-type: none"> • The support of the steering core is needed to help transition the innovative ideas of the heartland, in to belief and subsequently, in to culture. • the academic heartland should be empowered and willing for the efforts of the steering core to be fruitful
Steering core with the development periphery	<ul style="list-style-type: none"> • The ideational and material support, of the steering core is required to establish the development periphery • the development periphery, help the university diversify its funding base and hence gives the steering core a discretionary power to initiate and support entrepreneurial pathways will be constrained
Steering core with entrepreneurial culture	<ul style="list-style-type: none"> • The steering core can be considered as an enabler of culture • With integrated culture the steering core will create a steady state of change; as such culture can be considered as a complement and to some extent as a substitute of leadership.
Steering core with diversification of funding	<ul style="list-style-type: none"> • A diversified funding base will give the steering core the much needed autonomy in entrepreneurial university • management support is essential for diversification of funding
The development Periphery with diversification of funding	<ul style="list-style-type: none"> • The development periphery facilitates diversification of funding base • The diversified funding base will give the institution enhanced capacity which could lead to the strengthening of the existing units or to the establishments of new ones.
The development Periphery with entrepreneurial culture	<ul style="list-style-type: none"> • The development periphery can be considered as enabler of integrated culture, since it promotes internal and external collaboration • Integrated culture legitimizes the existence of the development periphery alongside departmental units
The development periphery with the academic heartland	<ul style="list-style-type: none"> • The development periphery promotes cross fertilization of ideas and collaboration with external stakeholders • The academics are the implementers of the collaborative projects that are brought to the institution by the development periphery

The diversified funding base with entrepreneurial culture	<ul style="list-style-type: none"> • Entrepreneurial culture fosters innovative which could leads to diversification of funding • Diversification of funding give the institution additional capacity to support innovative ideas
The diversified funding base with the academic heartland	<ul style="list-style-type: none"> • The academic heartland help the institution diversify its funding base • Additional fund will improve the discretionary power of leadership to support would be innovation from the academic heartland
The academic heartland and entrepreneurial culture	<ul style="list-style-type: none"> • Entrepreneurial culture develops through the interaction of the academic community and leadership. • Once entrepreneurialism becomes a culture and better yet a saga, it will act a source of inspiration and motivation for the academic heartland

3.7 Towards justifying the framework

The reason for adapting Clark’s framework is multifold. First, Burton Clark’s book on entrepreneurial university (1998) is widely regarded as a seminal work in academic entrepreneurialism (Taylor, 2012; Shattock, 2010; Vidović, & Bjeliš, 2006). Secondly, not only it is developed based on empirical evidence (Clark, 1998), but also it has been tested by Clark (in his second round visit to the case universities in 2004) and other researchers (Taylor, 2012; Vidović, & Bjeliš, 2006). Thirdly, a wide range of universities from different contents have been incorporated in his study, including a university from an eastern African country (Makerere University) with a set of similar features to the context of the country under consideration. Furthermore, Clark emphasized the importance the interrelationships amongst the entrepreneurial elements which is highly relevant for addressing the main research question of this study. Last but not least, it is written by a distinguished scholar with ample experience and knowledge of higher education in diverse contexts (Altbach, 2006).

3.8 How is this study different from that of Clark?

Although, this study heavily draws on Clarks two books on entrepreneurialism, (1998, 2004), it has some distinct characteristics that should be outlined. Firstly, there is a difference of purpose. In that, Clarks, intention was to identify, how some selected universities, managed to successful transform themselves and arrive at a more sustainable posture. As such he retrospectively, discussed the drivers of the transformation. In contrast, the aim of this research is to show how the case university is faring as regards entrepreneurialism as of now, by using the common traits of successful entrepreneurial university identified by Clark. Put simply, if Clark’s work is considered as a trajectory of transformation, this study can be considered as a snap shot of the current situation.

Secondly, there are some differences, in terms of methodology. To start with, Clark's case universities in both books are institutions that proclaimed to be entrepreneurial and/or institutions who he thought have successfully repositioned themselves. In fact this is one of the criticisms about Clark's work (Altbach, 2006, p.234; Finaly, 2004) However, in this study the researcher does not claim that the university under consideration (AAU) is entrepreneurial.

Additionally, in this study an attempt to include a more diverse group of respondents (i.e., internal and external stakeholders; top, middle, lower level managers; academic staff, and students) was made. What's more, a special attention is paid to the role of students in entrepreneurial transformation. Lastly, the current study also emphasizes the engagement of the university with the local community considering its strong implication on socio-economic development especially in a developing country like Ethiopia.

Chapter Four: Research Methodology

4.1 Research paradigm

Research paradigm serves as a good starting point, as it has its own bearing on the strategies and methods adopted throughout the research.

4.1.1 Types of research paradigms

Creswell (2003) identifies four research paradigms that underpin any given study: *postpositivism, constructivism, advocacy, and pragmatism*.

As the name implies Post-positivist knowledge perspective is an extension of positivist knowledge claim, with a strong skepticism as to the existence of an '*absolute truth*' (Merriam, 2009). Particularly, post-positivists ascertain that "*we cannot be positive about our claims of knowledge when studying the behavior and actions of humans*" (Creswell, 2014, 2003, p.7). This skepticism about '*absolute knowledge*' is precisely why post-positivists refine a theory continually through hypothesis testing (Creswell, 2003, p.7). Postpositivist paradigm is deterministic and reductionistic in its nature (Creswell, 2014). Deterministic in the sense that every outcome is assumed to be the end result of a set of inducing factors (hence, cause and effect relationship) and reductionistic in the sense that the research problem is discerned in to specific questions/hypothesis that will be verified in the study (Creswell, 2003). Lastly, postpositivist researchers consider objectivity (data, method and conclusion) as a hallmark of quality research; as such they strive to improve the trustworthiness of the study (Creswell, 2014).

The second school of thought i.e., *social constructivism* refutes the objectivity claim of postpositivism. It gives recognition to the multiple meanings that respondents could possibly hold about objects or events around them (Merriam, 2009, p.8). Furthermore it acknowledges that these meanings are a function of the interaction of individuals with their fellow beings. As such meanings are assumed to be negotiated and reconstructed over time, in light of the historical and cultural context that underpins them (Creswell, 2003, p.8). Moreover, as meanings are subject to multiple interpretations, social constructivists opt "*for the complexity of views rather than narrowing meanings into a few categories or ideas*" (Creswell, 2014, p.37). This is in contrast to the reductionistic nature of post-positivists approach mentioned above. Another major departure from postpositivism is in the fact that constructivism often starts without any prior theoretical proposition (Creswell, 2014). This is because the aim is to construct meaning from the views of the participants.

The third school of thought is Advocacy/participatory knowledge claim. Advocacy claim grew out of the belief that both the aforementioned school of thoughts did not give sufficient attention to marginalized groups in a society. The objective of researchers who take the advocacy knowledge stance is therefore, airing the various repressions that different parts of community are exposed to and subsequently stimulating reforms that will readdress the prevailing

imbalances (Creswell, 20014). As such advocacy research is practice oriented in its nature. It is also participatory as the researcher closely works with the supposedly “*marginalized group*” in exposing the constraints that prevail (Merriam, 2009, p.36). *Feminist perspective, radicalized discourses, queer theory, and critical theory are some of the examples of Advocacy research* (Creswell, 2003, p.10).

The fourth knowledge stance is pragmatism. Perhaps the most defining feature of this research paradigm is the fact that it is application oriented. As such emphasis is given to the problem and its plausible solution (Paton, 1990, cited in Creswell, 2003). Another defining feature of pragmatism is the use of pluralistic approaches. In that researchers are assumed to be free in choosing any combination of research designs and strategies that are deemed to yield better understanding of the problem at hand. It is therefore common to see researchers with pragmatism knowledge stance, using a mixed research design (Creswell, 2003).

4.1.2 Researcher’s position

I approach this particular research from the perspective of social constructivism. I believe the form and/or status of entrepreneurialism is inextricably bounded with the context it is undertaken. Hence the historical and social context should always be taken in to account. And this is one of the reasons that necessitated the undertaking of this study which concerns having a deeper understanding of, how entrepreneurialism unfolds in a developing country context.

I also tend to think that, what is presented as ‘knowledge’ or ‘reality’ is a function of meaning making which is dependent on the researchers and participant’s perception. Therefore, recognition is given to multiplicity of meanings. Accordingly, attempt was made to capture findings that uniquely emerged in the study.

Lastly, it should be noted that (although not so common amongst researchers with social constructivism knowledge stance) (Creswell, 2003), in this study a theoretical/analytical framework (Clark, 1998) will be used. However, the purpose of the analytical framework is not hypothesis testing (as opposed to post-positivists use of theory) rather it is simply used for focusing the research.

4.2 Research method & design

Of the three broad research methodologies available, (qualitative, quantitative, mixed), this research follows a qualitative approach. Qualitative research has a long history as a practice, especially amongst anthropologists and sociologists who systematically collected data to have an understanding of people or events in their natural setting. However, *what we call qualitative research only emerged in the second half of the twentieth century* (Merriam, 2009, p.6).

Qualitative approach to research is “ *an umbrella term covering an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the*

meaning, not the frequency, of certain more or less naturally occurring phenomena in the social world” Van Maanen (1979) cited in Merriam (2009, p.13).

Qualitative research is distinct from quantitative research in the sense that its purpose is not quantification or measurement. As Pratt (2009) cited in Gebremeskel (2015, p.38) states “how” is of more interest to a qualitative researcher than “how many”. Moreover, qualitative researchers do not intend to find reality and acknowledge the multiplicity of meanings; as such they try to construct it from the point of view of the participants (Merriam, 2009, p.8). Similarly, determining casual relationships, making comparisons, testing hypothesis and generalization are off little concern for qualitative researchers. Rather their intent is getting a good insight of people, processes and/or events.

Qualitative approach is considered more suitable for this study, because the topic of investigation “*entrepreneurialism*” as well as the specific dimensions (with the exception of diversification of funding), do not lend themselves to quantification. Moreover, the dynamics of the entrepreneurial elements, which is the main focus of the study, clearly necessitates a qualitative approach.

Within the framework of qualitative research, this study specifically adopts a case study design. Case study is one of the most widely used study designs within the realm of qualitative research (Yazan, 2015).

There are several definitions of a “case study”. In this regard, a good starting point is defining what a “case” is. Stake, (1995) as cited in Yazan (2015, p.139) defines a case as “*a specific, a complex, functioning thing, more specifically an integrated system which has a boundary and working parts*”. A case study is therefore the systematic and rigorous analysis and description of this bounded system with its integrated elements. However, the fact that the case is bounded should not be confused with lack of interaction with the external environment. It simply refers to the choice the researcher has to make in relation to delimiting the unit of analysis (Merriam, 2009). In fact the notion of interaction is given high emphasis in this particular study which conceptualizes entrepreneurialism as a function of the interaction of the subsystems with each other (i.e., leadership, staff, and students) and with actors in the external environment.

Perhaps the most comprehensive definition of case study is given by Creswell (2007), who conceptualizes it as

qualitative approach in which the investigator explores a bounded system (a case) or multiple bounded systems (cases) over time, through detailed, in - depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case - based themes. P.73

As can be seen Creswell (2007), also gives recognition to the particularistic nature of case study design with its multiple data gathering techniques.

Merriam (2009), states that the bounded nature of case study gives the researcher the upper hand to thoroughly investigate a particular phenomenon, which will subsequently lead to a greater insight and “thick”²² descriptions. The resulting deeper insights have also a potential to extend the existing body of knowledge (Stake, 1995).

Similarly, in this study the researcher intends to have a thorough understanding of the dynamics of entrepreneurialism within the context of a bounded system (i.e., the case university), as such the use of qualitative case study design was deemed appropriate (Yin, 2004, p.2). Moreover, case study design is the most preferred approach when it comes to studying entrepreneurialism (see for instance Clark, 1998, 2004; Shattock, 2005; Etzkowitz 2013b).

4.3 Research Setting, Participants and Sampling

4.3.1 Research setting

The case university considered in this study is Addis Ababa University (AAU). Being established in March, 1950 AAU ranks as the most senior HEI in Ethiopia (AAU, 2011). AAU was established under the auspicious of the then King Haile Silassie I. “*until recently, AAU was the only HEI in Ethiopia*” (AAU, 2011, p.3). AAU has seen unprecedented expansion over its relatively long years of existence, which is clearly reflected in the rise of the number of enrolled students i.e., it surged from only 33 in 1950 to 51,533 in 2015 (AAU, 2015b).

The mission of the university is to

Produce competent graduates, provide need-based community service and produce problem-solving research outputs through innovative and creative education, research and consultancy service to foster social and economic development of the country (AAU, 2013a, p.8)

While, its vision is “*to be ranked among the top ten pre-eminent African graduate and research universities in 2023*” (2013a, p.8).

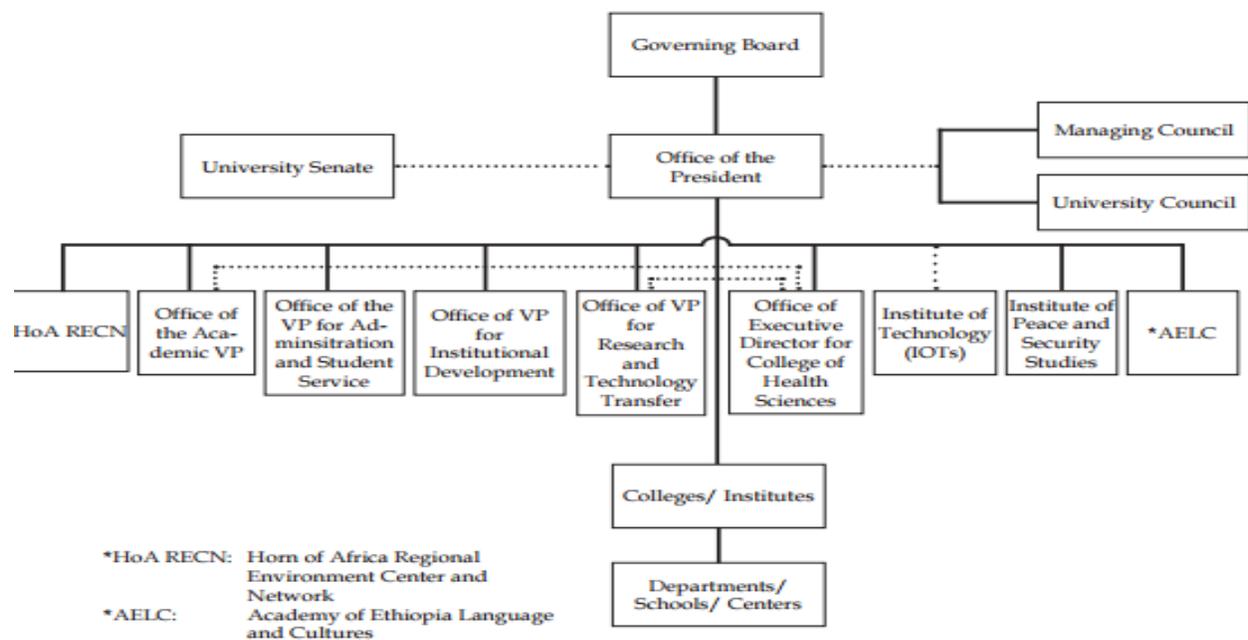
AAU is a comprehensive university organized under 10 colleges, 10 institutes (the majority of which are mainly tasked with research), 55 departments, 12 centers, 9 schools, and 2 teaching hospitals (AAU, 2015c, p.2). The colleges’ directors are directly linked with the five v/p offices, which in turn are expected to report to the office of the president (see Figure 2). This study is purposefully delimited to one college and two institutes: college of Education and Behavioral

²² *Thick description is a term from anthropology and means the complete, literal description of the incident or entity being investigated Merriam ,2009, p.43*

Studies (CEBS), Addis Ababa Institute of Technology (AAiT), and Institute of Educational research (IER).

The College of Education and Behavioral Studies (CEBS) is established two years after the inauguration of University College of Addis Ababa (the forerunner of the current AAU). It was initially established as a unit within the Faculty of Arts. However, it was upgraded to the status of faculty in 1963 and recently in to the status of college (Background, 2016a). The college has five departmental units which focus on different aspects of education and one school of psychology. The college resides inside the premises of the main campus of AAU.

Figure 2, AAU organizational chart



Source: AAU (2013c, p.13)

Institute of Educational research (IER) was initially founded in 1968 within the then faculty of Education. However, in 1983 it was restructured as an autonomous research institute. Apart from its main research mission, it has also been engaged in teaching and community service initiatives (Background, 2016b, para.1). IER is also located within the main campus of AAU.

Addis Ababa Institute of Technology (AAiT) is one of the oldest educational units at AAU. However, until recently, it was structured as a Faculty (AAU, 2013c, p.115). AAiT is a semi-autonomous institute with four engineering related schools (*School of Civil and Environment Engineering, School of Electrical and Computer Engineering, School of Mechanical and Industrial Engineering, School of Chemical and Bio Engineering*) and four centers (*Center of Biomedical Engineering, Center of Energy Technology, Center of Railway Engineering, Center of Information Technology and Scientific Computing*). Its structure is different from the other

colleges at AAU in the sense that scientific director has a comparable power to a vice/president (AAU, 2011).

The main rationale for including respondents from the aforementioned education units is mainly methodological. Firstly, the relationship between CEBS and IER (which grew out of CEBS) provides an excellent opportunity to study the dynamics of the development periphery and the academic heartland. Secondly, the inclusion of respondents from CEBS and AAiT is also relevant to get rich and diversified perspective, since the two disciplines are assumed to have different predispositions towards entrepreneurial transformation (See Clark, 1998). Part of the decision has also to do with convenience, as the participants from those educational units were more willing to take part in the study.

In the same fashion, the choice of AAU as the main site of investigation can also be justified. Firstly, AAU being a seasoned and premier institution in the country has been acting as a flagship university (WB [World Bank] cited in Teferra, n.d.) for the younger universities in the country. Hence, the findings of the study will be of interest to a broader audience. Secondly, a preliminary review of the universities internal documents revealed that the university desires to make an entrepreneurial transition. For instance, in 2012, the university undertook a major reform which led to the creation of v/p position for knowledge and technology transfer. The recent inclusion of ‘*entrepreneurship*’ as a core value and a corporate objective is another of such signal. Thirdly, due to the short tenure of the researcher at the university (as a lecturer), access to the research site and data collection was assumed to be easier.

4.3.2 Sampling strategies

In order to have a deeper understanding of the phenomenon under investigation and also improve the accuracy and credibility of the findings, a wide range of complimentary sampling techniques were employed in conjunction i.e., *purposeful sampling, maximal variation sampling, snowball sampling, and confirming/disconfirming sampling* (Creswell, 2012). A point worthy of note here is that, combining complimentary sampling techniques at different stage of the study significantly enhances the chance of capturing a complete picture including “*deviant cases*” (Nastasi, 1999, p.4).

Firstly, as often is the case with qualitative studies a purposeful sampling technique was chosen as an overarching strategy (Creswell, 2012, p.206). As such, individuals who were believed to provide pertinent information about the issue under investigation were purposefully included in the study (i.e., members of the central administration, academic departments, development periphery, students and external stakeholders).

Within the framework of purposeful sampling, maximal variation sampling (MVS) was initially adopted as a sampling technique. “*Maximal variation sampling is a purposeful sampling strategy in which the researcher samples cases or individuals that differ on some characteristic*

or trait” (Creswell, 2012, p.207-208). In this particular study the diversity of participants is of paramount importance because, the aim is to understand the dynamics of entrepreneurialism, which is a function of the interaction among different internal (students, professors, administrators) and external (regional and national governing bodies, industry and community) actors.

In addition to that while the data collection was in progress the principles of snowball sampling were implemented (to an extent). As such the researcher has systematically included participants which were recommended by the interviewees as ‘*information rich*’ regarding the topic under investigation. To mention one example, an informal conversation with one Associate professor at the case university led to the inclusion of a very experienced employee who has reached the status of laureate and who has served as Institute director and dean at AAU.

Similarly, ‘*confirming/disconfirming sampling*’ strategy emerged to be relevant as the data collection was on progress. “*Confirming/disconfirming sampling is a purposeful strategy used during a study to follow up on specific cases to test or explore further specific findings*” (Creswell, 2012, p.209). To mention one such instance, was the inclusion of the financial officer of a PLC established by the university in order to confirm some of the claims made by the Vice president of institutional development.

In a nut shell, although the sampling strategy initially adopted was ‘purposeful maximal variation sampling’, some of the principles of ‘snowball sampling, and Confirming/disconfirming sampling’ were also used at different stages of data collection.

4.3.3 Participants

By using the aforementioned sampling strategies a total of 44 purposefully selected respondents participated in the study. As can be seen in table-6, 38 of the participants were internal stakeholders, while the remaining 6 were external stakeholders. The rationale behind including the perspective of external stakeholders is simply because academic entrepreneurialism is inconceivable without collaborating with external stakeholders. Whereas, the rationale for the very high concentration of internal stakeholders is because the central research question is about the dynamics of entrepreneurial dimensions which, although in constant interaction with the external environment are nonetheless internal to the institution.

Lastly, it can also be observed that effort was made to include participants that are more directly related with the elements in the analytical framework. For instance in connection to the important role entrepreneurial universities should play in terms of engaging with the local community in the context of developing countries (see chapter 3), a more extensive interview was undertaken with the office of community services at AAU (i.e., a total of four participants were included).

Table 5 participants of the study

	Position	Number	Method
Internal Stakeholders	Vice presidents	3	In-depth Interview
	Directors (institute and college)	3	
	Director (Office of community services)	1	
	Director (of University-Industry Linkage and Technology Transfer)	1	
	Expert (Office of the Director for Research)	1	
	School/Department Heads	5	
	Academic staff	6	
	Community service experts	3	Focus Group Discussion
	Financial Officer	1	Interview
	Students	14	Focus Group Discussion
External Stakeholders	Vice Mayor (Addis Ababa)	1	In-depth Interview
	Deputy Minister (Science and Technology Ministry (MoST))	1	In-depth Interview
	Financial director (Ministry of Finance and economic development)	1	In-depth Interview
	Communication officer (Ministry of Trade and investment)	1	In-depth Interview
	Director (Ethiopian intellectual property)	1	In-depth Interview
	Knowledge and technology transfer officer (Science and Technology Ministry (MoST))	1	In-depth Interview
Total		44	

4.4 Data Collection Tools, procedures and the researcher’s role

4.4.1 Interview: one-on-one and focus group

In this study, interview has been employed as the primary data collection technique. Two types of interviews were conducted: one-on-one and focus group discussions. While One-on-one, in depth interview was used to collect data from most of the respondents, Focus group discussion (FGD) was used to elicit information from students and community service specialists. More

precisely, two groups (of seven students each) were formed to conduct FGD with students²³; while, one group of three individuals was formed to conduct FGD with community service specialists. Focus group discussion refers to *“the process of collecting data through interviews with a group of people”* (Creswell, 20012, p.218). FGD allows the gathering of *“quality data in a social context where people can consider their own views in the context of the views of others”* (Patton, 2002, cited in Merriam, 2009, p.94). And this feature of FGD is especially important to create a common understanding amongst participants who may have different conception of the construct under investigation.

In both cases (one-on-one and FGD) a semi-structured interview questions were used. According to Merriam (2009, p.90), in semi structured interviews *“the largest part of interview is guided by a list of questions or issues to be explored, however, there is enough flexibility in the exact wording and the order of the questions”* [emphasis added]. Semi-structured interview is chosen in this study in order to allow the respondents to freely express their perception of the topic under investigation while at the same time maintaining focus on some of the pertinent issues of the study.

Lastly, with regard to the data collection procedure, it is worth mentioning that, all of the interviews were contacted in person prior to the interview, in order to; communicate the purpose of the study, and set up an appointment at their convenience. A total of 44 respondents gave their willingness to participate in the interview, out of which the vast majority i.e., 38 of the interviewees were willing to be phone recorded. The interviews were in the range of 21 to 70 minutes.

4.4.2 Document review

In addition to the data that was gathered through an interview, the review of internal and external documents related to the topic under investigation served as an integral part of this study. Selected internal documents (such as, strategic plans, financial statements, reports, and minutes) were reviewed along with pertinent external documents (such as HE proclamation; Growth and transformation plan of the country; science, technology and innovation policy; and other directives). The data from the document was used in conjunction with the data from the interview, in order to create a more complete and credible picture.

4.4.3 Site visit

Lastly, attempt was also made to visit the incubator facility at the case university. This is simply to have a closer observation of the status of the business incubator.

²³ Where possible attempt was made to include student representatives in to the focus group, in the belief that they have more exposure to any entrepreneurial support the university may provide. This is to mean that their role as an intermediary between students and staff will give them the upper hand to stay informed.

4.4.4 The researcher's role

In a qualitative research, it is essential to identify personal values, assumptions and experiences that go in to the research, as it has clear implication on the way the research outcome is interpreted and communicated (Creswell, 2014). Through such identification; strategies could be developed to reduce the possible bias such experiences will bring.

In this regard, with 6 years teaching experience in three public and one private HEI in Ethiopia, it is fair to say that the researcher has a good understanding of the higher education system of the country in general and the case university in particular. Especially in the case university (AAU), the researcher had a short tenure as an instructor in addition to 3 years of experience as a bachelor student. Moreover, having studied business oriented disciplines both at under-graduate and graduate level the researcher has good familiarity with the topic of entrepreneurship in general.

Such closeness to the research topic and site is a two-edged sword that should be approached carefully. On one hand, the researcher's familiarity with the topic and research context adds value to the research process. Particularly, in terms of gaining access to the research site and also in making sense out of the data collected. On the other side of the coin, this strong attachment to the case university and the topic could increase the researcher's bias (Creswell, 2014). Being aware of this, the researcher has applied *member-check*, *peer-debriefing* and "*Thick*" *descriptions* as bias reduction strategies (see section 4.6 for detail).

4.5 Data analysis strategy

The data analysis strategy²⁴ followed in this research is qualitative content analysis. Content analysis as a data analysis and presentation strategy has its roots in the 18th century (Hsieh & Shannon, 2005). However, its popularity has increased tremendously over the past few years, more particularly in the US.

Although, content analysis can be applied in both qualitative and quantitative studies, the current trend is such that; its application in quantitative studies is declining, while its application in qualitative studies is rising (Cho & Lee, 2014). According to Hsieh & Shannon, (2005)

Qualitative content analysis [refers to] a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns. P.1278

²⁴ Although Hsieh & Shannon (2005), consider qualitative content analysis as a qualitative research methods in its own right, i.e., comparable to other qualitative methods such as phenomenology, ethnography, in this research it is considered as subset of a case study approach. In that it is specifically used to organize the qualitative data that emerged from the case study.

Put simply, qualitative content analysis is a systematic process of making sense out of a qualitative data. Hsieh & Shannon (2005) differentiate three distinctive Qualitative content analysis techniques: conventional, directed, and summative. The main difference amongst the three methods being the specific approach followed to develop the major themes which will be used to communicate the major findings of the study.

In the case of conventional qualitative content analysis the themes/categories will be developed inductively from the data (see Table, 6). This is in sharp contrast to ‘directed’ approach which is guided by a theoretical framework in developing the themes of the research. In directed content analysis, therefore the approach is deductive as the main themes are already predetermined. However, it should be noted that it is possible to account for other findings that might be unique to the context, by developing new themes or sub-categories. The third approach, i.e., summative, relies on ‘*counting and comparison of key words*’ to arrive at the major themes of the study (Hsieh & Shannon, 2005, p.1277).

Of these three strategies, ‘*directed content analysis*’ was employed in this research for the simple reason that it best fits with the objective of the study. As Creswell (2003), argues the nature of the problem to be investigated should dictate the research methodology to be adopted. In this study, the main objective was to uncover the perception of internal and external stakeholders regarding the existence and dynamics of entrepreneurial elements which were identified by Clark (1998) (i.e. *the strengthened steering core, the stimulated academic heartland, the expanded development periphery, the integrated entrepreneurial culture and the diversified funding base*). As such the entrepreneurial elements have served as a guide from the outset.

Specifically, they have acted as base while framing the research question, selecting the participants of the study and setting the semi-structured questions of the interview. Therefore, the entrepreneurial elements in their own right and in relation to one another were used as main theme of data presentation and discussion.

The use of a theoretical lens has a clear advantage of making the research more focused, hence manageable within the limited time and financial resources available for the research. And such structure and guidance are especially relevant to novice researchers (Yazan, 2015).

However, the strong bias associated with directed content analysis should be acknowledged. To start with, too much focus on the framework might adversely affect the attention paid to the unique contextual realities. Secondly, “*in answering the probe questions, some participants might get cues to answer in a certain way or agree with the questions to please researchers*” (Hsieh & Shannon, 2005, p.1283) which in turn may incline responses towards approving the theoretical framework.

Being aware of this limitations attempt was made to give sufficient spaces for the interviewees to reflect on relevant issues related to the topic under investigation that might even fall outside Clark’s illustration. Subsequently, new subcategories were formed to accommodate those new findings that are unique to the context.

Table 6 difference between inductive and deductive content analysis

Inductive category development	deductive category development
a) the research question	same
b) the determination of category and levels of abstraction	b) theoretical-based definitions of categories
c) the development of inductive categories from material,	c) theoretical-based formulation of coding rules
d) the revision of categories,	same
e) the final working through text,	same
f) the interpretation of results	same

Source: (Cho & Lee, 2014)

4.6 Trustworthiness

Although not as popular and rigorous as in the case of quantitative research, validity and reliability also form an integral part of a qualitative study (Creswell, 2014). ‘*Trustworthiness, authenticity, and credibility*’ are some of the common words used by qualitative researchers to refer to the accuracy of their research finding. Creswell (2014) identifies eight techniques that could be used to enhance the validity of the findings of a qualitative study; of which attempt was made to consider five of them in this particular study.

The first and arguably the most popular strategy for validation in qualitative studies is triangulation of methods and data sources (Merriam, 2009, p.215; Creswell, 2014). In this regard, attempt was made to collect data using different methods (i.e., one-on-one interviews, Focus group discussions, document review and site visits). Additionally, by using a wide range of participants who took part in the study (students, staff, leaders, and external stakeholders), data source triangulation was attempted. Stated differently, attempt was made to cross-check some of the claims made by one participant group, in light of the response given by other groups.

Secondly, member-check was used as an additional technique of validation. Specifically, the first draft of the analysis chapter was distributed to some of the participants at the case university in an effort to incorporate their feedbacks. This is especially important to reduce the researcher’s bias (Merriam, 2009, p.217).

The third validation technique applied is, peer-debriefing²⁵. In that the draft was distributed to three colleagues of the researcher (two with higher education expertise and the other a language professional). This is in addition to the continuous guidance and feedback received from the thesis supervisor. Once again the aforementioned feedbacks could reduce the bias that could arise from researcher's business background mentioned in (section 4.4.4).

Fourthly, Creswell (2014) mentions the provision of a “*rich and thick description*” as one viable mechanism of improving the credibility of a qualitative research. To this end, where possible attempt was made to provide a detailed description of the participant's opinion. Moreover, in order to give the feeling of the actual research setting attempt was made to briefly describe the context of the country and the case university.

Fifth, it is also worth mentioning that a separate section has been included (i.e. section 4.4.4) to reflect on the possible impact of the researcher's educational and professional background on the interpretation of the findings which once again adds to the trustworthiness the research (Creswell, 2014).

4.7 Ethical considerations

Ethical consideration has a multitude of benefits for any given research. Among other things, it significantly promotes the overall quality and acceptability of a research. It should be noted that ethical consideration is not a onetime activity, rather researcher need to anticipate and overcome possible ethical consequences on ongoing basis (i.e., starting from the initial inception of the study up until its dissemination (Creswell, 2014). Accordingly, attempt was made to take ethical issues in to account throughout the conduct of this research.

First and foremost, permission to conduct the study in the case university i.e., AAU was gained by submitting a formal letter²⁶, that briefly described the purpose of the study. Once the research site was approved, potential participants were individually contacted by the researcher to request their willingness and availability. Moreover, their willingness to be audio-recorded was also requested and only those who granted their permission were recorded.

Secondly, the ethical issues were also considered while treating the data gathered from the interviews. In that, the anonymity of all the respondents was kept by using pseudonymous codes.

²⁵ According to Creswell (2014, p.252bp) peer-debriefing “*involves locating a person (a peer debriefer) who reviews and asks questions about the qualitative study so that the account will resonate with people other than the researcher*”

²⁶ written by the university (with official heading, stamp and signature of co-supervisor) where the researcher is undertaking his graduate studies

Thirdly, attempt was made to incorporate the diversified perspective of respondents in the findings without bias. As such, opinions that fell beyond the framework developed by the researcher and opinions that the researcher do not necessarily agree with (in his experience as a student and instructor at the case university) were included in the analysis section. Lastly, following the advice of Creswell (2014), the researcher had distributed a free mobile air time for the student participants, as a gesture of gratitude.

Chapter Five: Data Analysis and discussion

In this section, the presentation and discussion of the data collected through one to one interview, focus group discussion, document analysis and site visit will be made.

The five entrepreneurial elements described in the theoretical framework will be used as an overarching theme. Additionally, various sub-categories that emerged from the data are formed under each theme.

Lastly, in order to comprehensively address the main research question, one additional theme (i.e., “The dynamics of the entrepreneurial elements at AAU”) with five sub categories is formed and discussed.

5.1 The strengthened steering core

5.1.1 Autonomy

As discussed in chapter 3, autonomy is one of the prerequisites of entrepreneurial transformation. This is simply because entrepreneurial transformation calls for departure from the traditional way of doing things. It requires anticipation of unique opportunities and devising strategies to capitalize on them. This experimentation on new pathways is difficult to execute when there are restrictions from the state or other external patrons who expect the university to behave in a certain way (Clark, 1998, 2004).

When it comes to the autonomy of the steering core of the case university (AAU) two contradicting responses were received from the participants of the interview. However, before discussing the interview results it is essential to briefly describe the funding and governance structure of the university, as they have clear implication for autonomy (Clark, 1998, 2004).

To begin with funding, AAU similar to other public HEIs in Ethiopia is nearly fully financed by the state. More specifically, 95% of the universities’ annual budget is allocated by the state (MoFED, 2015). This nearly complete state financing means the ministry has a strong stake on how the university behaves and that the university is susceptible to the influence of the ministry. This is notwithstanding the fact that public universities are allowed, in fact, encouraged by law to diversify their funding base in Ethiopia (see Higher education proclamation [HEP], 2009, art. 25, 26).

Secondly, a close look at the governance structure of public HEIs in Ethiopia reveals that they are inextricably linked with the ministry of education (MoE). To elaborate, the board which is the ultimate decision making authority²⁷ (HEP, 2009, art.44) is mainly appointed by the ministry²⁸. What’s more, it is directly accountable to the MOE (HEP, 2009, art.44/2).

²⁷ The board has even the authority to reverse decisions taken by the senate. As bluntly stated in article 55, sub article 1, clause “q” of the proclamation the board has the power to “*Rescind decisions made by the president or*

That being said, two contradicting categories of responses emerged with regard to the autonomy of the steering core at AAU. On one hand the response from the leaders themselves indicated that the ministry does not micro manage the operations of the university apart from merely providing consultation and guidance on major strategic directions. Specifically, as one of the leaders asserted.

There is autonomy; there is not much interference from the ministry. Of course there are policy directions coming from the ministry. However, the university decides how to implement them. The ministry does not interfere with the day to day operations of the university. SC1

He further went on to argue why closely working with the ministry is desirable

Of course we expect innovative ideas to come from the ministry. You know universities are engines of economic growth and they are important vehicles for poverty reduction. For this to happen coordination is essential and the ministry does the important work of coordinating and steering the direction of the higher education institutions, so that they will become consistent with the growth and transformation plan of the country. SC1

The response of the other leaders interviewed also echoed the same point.

The ministry of education is our important partner and we continuously interact and exchange information on issues of practical importance and I think this is healthy for any higher education system. However decisions regarding university operations concerning, teaching, research, community service and management of internal operations are still within our jurisdiction. SC3

Lastly, the third leader, (after stating that the university has the autonomy to make important decisions) asserted

You should have a broader perspective of the relationship. It is not a one way relationship. As much as they consult and guide the university, the university also influences the ministry in developing national higher education and science and technology strategies. SC2

On the other hand, the responses from academic staff indicated that the autonomy of leadership is seriously compromised. as one of the participant puts it

the senate when the decisions compromise institutional mission or contravene government policy, this Proclamation, or the Constitution" (HEP, 2009).

²⁸ The board constitutes seven members out of which four are directly appointed by the ministry. Even the remaining three, although nominated by the president wait for the approval of the ministry.

I have had an experience of involving in academic senate meetings and also meetings with the ministry. The trend is that reform ideas come from the ministry in a top-down fashion and university leaders are expected to pass it down to the lower levels [colleges and departments[.....]In my experience I have not seen or heard about any major reform idea of the ministry that is repealed by the university. But on the other hand if you ask me about major reforms initiated by the university leaders and approved by the ministry it is rare. AH5

Another interviewee traced the source of major reforms in the university to forces even beyond the ministry

Most of the reforms in my opinion are donor driven. Take “*modularization*” for example, it does not have local basis what so ever. It is the influence of major changes that were taking place in Europe. The problem is that our reforms and even research priorities these days follow money. I mean they lack local responsiveness. If you for instance observe Ethiopian publications, they are mainly done for foreign consumption. AH1, AH6

Some of the interviewees reflected on the influence of the ministry through “the board” (which falls under the purview of the ministry). In this vein, one of the academic staff reflected

The highest decision making authority as per the higher education proclamation is the board and the board as you know is synonymous with the ministry of education. AH8

Similarly, the other academics (AH2, AH4) reaffirmed the above point. Some of them cited the reforms that occurred in the university over the past few years as evidence (i.e., BPR, Modularization).

According to Nevo & Nevo (2009) such discrepancies in findings from different groups and/or methods are natural in research and where possible attempt should be made to integrate the conflicting perspectives. Clark also notes differences of perspective between academic staff (who often have a horizontal discipline-oriented view) and leadership (who have vertical, enterprise wide view) in his land mark book “*The Higher Education System: Academic Organization in Cross-national Perspectives*” (Clark, 1983, p.32). That being said, in this particular case, evidences suggest that the claim of the academic staff is more credible.

To elaborate, as mentioned earlier, the fact that the board is the ultimate decision making authority is one indicator of the compromised autonomy of the university. In that, the senate has to run every major decision by the board before implementation, including, strategic directions, the use of financial resources, setting of research priorities, the number and type of programs, the assignment of staff and the admission of students (HEP, 2009).

In other words both the substantive autonomy²⁹ (strategic priorities, curriculum design and staff and student selection) and procedural autonomy (i.e, budgeting) of the university (see WB, 2010, for classification of autonomy) of the university are susceptible to the influence of the ministry.

And the ministry has been using this formal channel of authority (controlling the university through the board) to a greater effect as, most of the reforms that took effect in the case university over the past few years (i.e., BPR³⁰, BSC³¹, Modularization³², KAIZEN³³) indicate. This interference is of course greatly facilitated by the over dependence of university on the ministry for financial resources.

It is also understandable that the steering core is protective of the ministry considering their power relationships. As the proclamation states, the president, vice presidents and other officials that constitute the leadership are directly or indirectly appointed by the ministry. Moreover, as some of the interviewees revealed (it will be discussed in the sub theme of “managerial capacity”) some of the leaders are appointed as a result of their political affiliation rather than merit. It is hence, to be expected that they speak in favor of the ministry.

Lastly, this claim can be substantiated by the finding of other researchers who studied the Ethiopian public higher education system in general and the case university in particular. For instance, Mehari (2010), in his study of the Ethiopian higher education governance system, indicated that the interference of the ministry is having an adverse impact on organizational, financial, staffing and academic autonomy, of public HEIs in Ethiopia. According to Yimam (2008), who investigated academic freedom at AAU, there has always been interference from the state and that there is limited academic autonomy at the university, especially as compared to international standards. Gemedda (2008) is another researcher who examined the institutional autonomy of AAU. According to the data he collected from staff and students, institutional autonomy at the university is at best low. Similarly, other researchers (Gebremeskal, 2011; Tafesse, 2008; Akalu, 2014) also asserted the same stance.

The strong interference of the state in the affairs of the university has a detrimental effect on entrepreneurial transformation as it promotes homogeneity rather than institutional

²⁹Berdahl (2010, p.8), Divides institutional autonomy in to two: substantive and procedural. While the former corresponds to the core mission/purpose of the university i.e. “What of Academe”, the latter refers to how the universities go about achieving their core mission hence the “How of Academe”.

³⁰ Business process reengineering is a reform initiated by the ministry of education with the purpose of enhancing the capacity and efficiency of public universities (Moges, 2015; Aschalew, 2013)

³¹balanced scorecard is designed to describe, measure, and help manage the strategy of the university and it is initiated by the ministry as the internal documents of the university testify (AAU, 2013a, p.85-86)

³² Modularization of the curricula of public higher education institutions is another reform initiated by the ministry of education (Moges, 2015).

³³ KAIZEN is a Japanese management philosophy which ascertains organizational wide continuous improvement. Its implementation has been initiated by the state across different sectors including the case university (Desta, 2013).

distinctiveness (Clark, 1998; Shattock, 2005, 2008, 2010). This has been clearly witnessed in the case country (Ethiopia). Specifically, the introduction of BPR across all public HEIs has created a similar type of internal organizational structure (although some have undergone another restructuring after BPR); while the national harmonization initiative of the ministry has resulted in similar curriculum across all public universities in the country. Lastly, the current 70:30³⁴ student admission policy of the ministry is also adding to the homogeneity of public higher education institutions by creating similar student profile.

5.1.2 Entrepreneurial will

As Clark (1998, p.5) notes and rightly so “*formal grant of autonomy [...] does not guarantee active self-determination*”. This is to mean that, entrepreneurial transformation also depends on the resolve of management to actively capitalize on its autonomy or, better yet, to seek and expand it.

The will of management to drive entrepreneurial transformation can be evaluated, in terms of whether there is a strategy that fosters entrepreneurialism; and whether the structure of the university fosters entrepreneurialism and whether or not there is a support system for staff and students to engage in entrepreneurial activities; among other things.

When it comes to the steering core of the case university, it can be said that entrepreneurial transformation is seen in a positive light. One of the indicators could be the structural reorganization the university undertook in 2012 that resulted in the creation of a V/P position for research and technology transfer (VPRTT). The VPRTT is established to facilitate research, community service, university-industry linkage and technology transfer (AAU, 2013a, b, c; Abera, 2013).

Moreover, entrepreneurship has also been incorporated as part of the core value of the institution (AAU, 2011). Apart from that, the review of the strategy document of the university also indicates that entrepreneurialism is getting increasing attention. Specifically, of the four key strategic themes the university identified two of them directly refer to entrepreneurialism: “*Excellence in research and technology transfer, and Excellence in community Service, engagement and strategic partnership*” (AAU, 2013a, p.23). Lastly, the introduction of ‘Thematic research’ and ‘adaptive problem solving research’ which have some attributes of Mode 2 research is another indicator of the recognition of entrepreneurial transition.

The interview results generally confirm the claim made above using the internal document of the university, i.e., they agree that some improvements have been witnessed after the reorganization that led to the establishment of (VPRTT). One achievement commonly cited by the interviewees

³⁴ The current admission policy of the ministry is such that 70% of the spots in public universities are reserved for students in science and technology related fields while the remaining 30% is allocated for social science students.

(SC1, SC2, SC3, DP1) was the establishment of business incubator³⁵ in order to assist staff and students further develop their innovative ideas. For instance one of the leaders stated

Entrepreneurship is high on our list. It is one of the key areas the university is focusing on. The need has already been recognized and strategy has been formulated accordingly. And some encouraging results are being witnessed. For instance, business incubator has already been setup. However, it takes time to internalize it and make it part of the organizational culture. (SC1)

One of the department heads also reaffirmed this positive attitude

Entrepreneurship has become a “buzz word” in this university; it is brought up in meetings and deliberations [.....] Generally there is a positive attitude towards entrepreneurship from leadership [...], what is lacking is how to make it practical. AH3

However, despite this generally positive attitude towards entrepreneurialism and some of the encouraging results, a number of deficiencies were pointed out by the interviewees: lack of incentive for entrepreneurial activities, excessive procedure, lack of space for bottom up initiatives, lack of finance, overlapping responsibilities (i.e., between V/P for institutional development and V/P for research and technology transfer), conceptual confusions (i.e., what constitutes a community service), lack of rule and regulations to guide knowledge and technology transfer as well as community service activities. Most of these findings are also consistent with the SWOT analysis undertaken by the university itself (AAU, 2013a, 2015c).

All in all, although the current interest on entrepreneurialism from leadership’s side is to be appreciated, the aforementioned deficiencies require attention. And the new offices and initiatives should be integrated in to the workings of the institution. In that, staff and students should be aware of them and more importantly, should capitalize on them to turn their innovative ideas in to reality. As Clark (1998), argues a process of simply opening offices here and there will not guarantee successful entrepreneurial transition (this will be expounded up on, in chapter 6).

5.1.3 Managerial capacity: Part Politics part Merit based appointments at AAU

As Clark (1998, 2004) points out the increasing environmental pressure demands enhanced managerial capacity from higher education institutions. As pointed out in chapter 3, HEIs are simply too sophisticated to be run by “amateur” academics (Birnbaum, 1998, p.7; Altbach 2009, p.170). This does not mean, however getting rid of collegiality. It just simply means supporting

³⁵ As the site visit to the incubator in January, 2016, revealed it was not yet operational. However, according to one of the respondents from the office of VRTT five tenants have already been selected and they are waiting until some the facility is fully furnished.

the academic staff by providing the professional expertise they require to successfully manage the operation of today's sophisticated universities. This of course could be accomplished without external interference if the academic staff already possesses managerial expertise. However, the other alternative and the most common practice is to hire professionals with managerial expertise to help assist in effectively and efficiently running HEIs. As Clarks (1998, 2004) demonstrated in his case study, entrepreneurial universities are a blend of collegiality and managerialism.

When it comes to the case university however, a new dynamics emerged than what Clark discussed. That is, while Clark (1998, 2004) was more concerned about reconciling academic and managerial tensions; the opinion of the participants added a third element to the dynamics: favoritism based on political affiliation and personal relationship. As one of the academic staff interviewed stated

In our country's context education and politics are married. It has always been this way. You have to be at least a neutral in order to stand any chance of occupying an important position within the university. In addition to that your personal relations play a role. AH5

Another interviewee reflected

The university leaders are political appointees. Some don't even have experience in the higher education sector before being appointed to the post. This extends all the way to the ministry of education. However, I have to say a few of them are really capable individuals who have a good name even in international level. AH1

This trend of mentioning the role of political and personal affiliation in appointments was evident in the response of the other academics (AH3, AH5, AH7). The other trend that emerged was praising one or two members of the central administration while condoning the other. In this regard statements like, "*I know Mr. "X" before he was assigned to the university; he has abundant experience in leadership*" were common.

In consideration of the above two trends that emerged from the interview, it can be said that leadership appointment at the case university is affected mainly by political affiliation and personal relation and to a lesser extent, by merit.

The role of politics in the governance of public universities is also noted by other researchers who studied the Ethiopian higher education landscape (see, Mehari, 2010; Assefa, 2008; Gebremeskel, 2015).

Clearly, the presence of politics as a dominant element in the governance system adds yet another difficulty for the realization of an entrepreneurial university in the context of Ethiopia because it adversely affects the openness and commitment of the academic staff. As Clark (1998) points out the academic staff will even resist professional managers when they do not agree with

their ideologies and/or approaches, let alone politically appointed leaders, whose capacity is questionable.

5.2 The stimulated academic heartland

The second essential element of an entrepreneurial university identified by Clark (1998) is a stimulated academic heartland. This refers to, motivating the academic staff and students, to embrace the new entrepreneurial values, which among other things, entails providing support (structural, technical and financial) to induce staff and students to engage in more collaborative, transdisciplinary and application oriented research.

In order to systematically reflect on the stimulation of the academic staff and students to engage in entrepreneurial activities, the theory of planned behavior [TPB] (Ajzen, 1991) will be used as analytical tool.

The theory of planned behavior considers, intention as a broader construct that “captures the motivational factors that influence a behavior” (Ajzen, 1991, p.181).

According to the theory individual’s intention to engage in a certain behavior (in this case entrepreneurial activities) depends on three interconnected motivational factors: attitude, normative belief and perceived behavioral control.

The first antecedent of behavior, i.e., attitude, “*refers to the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question*” (Ajzen, 1991, p.188). In other words, whether or not staff and students have a positive or negative attitude towards, entrepreneurialism will affect their motivation to engage in performing the behavior.

The second antecedent of behavior, i.e., normative belief, “*refers to the perceived social pressure to perform or not to perform the behavior*” (Ajzen, 1991, p.188). Clearly, the opinions of others who we believe are important to us (i.e, peers, family, and the society in general) will affect our decision to engage or not to engage in a particular behavior.

The third determinant of behavior is perceived behavioral control (PBC) which “*refers to the perceived ease or difficulty of performing the behavior and it is assumed to reflect past experience as well as anticipated impediments and obstacles*” (Ajzen, 1991, p.188). In other words, staff and students evaluation of their own competence and the favorability of the environment will affect their level of motivation. Clearly, the entrepreneurial support provided in the university has a key role to play in this regard.

The aforementioned factors will be used to discuss how stimulated the members of the academic staff and students are to engage in entrepreneurial activities. The rationale behind adopting the theory of planned behavior is because it provides a comprehensive picture. This is to mean that rather than simply stating how motivated/stimulated the staff and students are, it would allow the identification of the factors (i.e., attitude, social pressure or perceived behavioral control)

contributing to the observed motivation level. And this in turn would allow the development of more directed and effective intervention strategies.

5.2.1 Staff and Students Attitude vis-à-vis Entrepreneurship

As mentioned above the first important antecedent of behavior is attitude. In this regard, attempt was made to determine whether students and staff have a positive appraisal of entrepreneurship or not. Moreover, staff and students were also directly asked whether they are engaged and/or intended to engage in entrepreneurial activities. In this regard, results of the study revealed a varying level of appreciation and readiness between students and staff.

To start with student's response, the result of the focus group discussion showed that students generally have a positive attitude towards entrepreneurship. But when it comes to becoming an entrepreneur after graduation, almost all of the students who took part in the focus group discussion stated that being employed is the most preferred option at least for the first few years after graduation. Although this sounds contradictory to the positive attitude they hold towards entrepreneurialism, it is understandable since behavior is also affected by the other two motivational factors, i.e., normative belief and perceived behavioral control (see the next two sub sections for detail).

On the other hand, when it comes to the university staff, in addition to having a positive attitude towards entrepreneurship (more forcefully expressed than students) most of them were found to be engaged in entrepreneurial practices although it is mostly, outside the university setting. In that most of the staffs interviewed were undertaking wide range of activities that diversify their personal income outside their working hour at the university. Moreover, all of them echoed that this trend is not limited to them rather it is widely prevalent in the university. Perhaps the response of (AH3) is capable of summarizing their opinion.

Most of the academic staff actively undertake external projects and/or perform training and consultancy services. You know Addis Ababa University has built a good reputation over the years and the university staff uses this reputation to convince and work in external party financed projects, both national and international organizations. AH3

When it comes to the driver of such entrepreneurialism they cited the mismatch between the high cost of living and the lower salary that characterizes the Ethiopian HE system. Whereas when they were asked, why they choose external entrepreneurial pathways, they raised a number of inhibiting factors within the university (which will be discussed under section 5.2.3 as it relates to perceived behavioral control).

5.2.2 Staff and Students Normative Belief vis-à-vis Entrepreneurship

The second contributing factor to behavior is normative belief. In this regard, students response indicated that they do not face any social pressure to engage in entrepreneurial practices. To the

contrary, they cited social pressures that contributed not to perform the behavior in question. The students cited religion as one societal factor that discouraged entrepreneurial behavior (SS4). Another student mentioned the culture of the society as a factor that discourages entrepreneurial behavior.

In general our society gives high regard to being educated and doing something professional. This does not make you seek another alternative. I mean it will already give you a sense of being successful. SS2

Another participant of the focus group built on that by stating “*in fact the society discourages you, as failure is considered as a shameful act*” (SS9). Family was also cited as another contributing factor for not performing entrepreneurial activities. “*My family wants me to become employed as soon as I finish my studies; I also feel obligated to financially support them, therefore I have to look for a job as soon as I graduate*” (SS11). When they were asked about the pressure they face from within the university, they stated that although leadership and academic staff talk about entrepreneurialism as something positive, they do not strongly encourage them to become entrepreneurs. However, a few of the students mentioned some events i.e., experience sharing and motivational events that they have participated in.

On the other hand, when it comes to the response of the staff, social pressure was not mentioned as a major factor. Rather most of the interviewees were more focused on other challenges that inhibit entrepreneurial behavior (it will be discussed in the following section as it relates to perceived behavioral control).

5.2.3 Staff and Students Perceived Behavioral Control vis-à-vis Entrepreneurship

The third determinant of intention to engage in a certain behavior is perceived behavioral control (PBC) (Ajzen, 1991, p.188). Once again it is essential to discuss the PBC of staff and students separately as they differ in many important dimensions.

With regards to students, it can be said that they have low PBC. In other words they consider entrepreneurialism difficult to realize. The students mentioned a wide range of factors that contributed to the low PBC, most of which are internal to the institution. To begin with, they believe that they do not possess sufficient entrepreneurial skills. In that they stated, apart from the existence of an entrepreneurship course (which is offered for students in their last year of graduation) and the infrequent experience sharing events organized by the university, the opportunity to improve their entrepreneurial competence is limited.

Secondly, they mentioned the highly theoretical nature of the courses at the university as limiting their ability to innovate actual products. A point worthy of note is that most of the participants in the focus group were technology students (i.e., from school of Electrical & Computer Engineering School of Chemical and Bio Engineering, School of Civil & Environmental Engineering, School of Mechanical Engineering).

Thirdly, they mentioned a number of problem connected to their internship experience, i.e., “*poor supervision*”, “*internship report for securing grade only*” “*lack of financial support to develop the internship idea in to a prototype*” (respondents SS11, SS9, and SS7 respectively).

Fourth low practical support from the teachers was raised. The students claimed that most of the teachers are very busy and do not devote sufficient time to help them develop their ideas. As one of the participant put it “*our teachers are busy, some are learning themselves and some have responsibility within the university and some of them work on external projects*” SS9.

Fifth they mentioned the poorly furnished workshop facilities at the university as yet another limiting factor for developing their practical competence.

Sixth they raised the problem of Bureaucratic procedure associated with entrepreneurial activities both inside and outside the university. Internally, one participant shared the experience of the previous cohort where the financial support for undertaking their thesis was delayed, which forced the students to find the money from elsewhere. Lastly, in addition to the aforementioned internal challenges they believed a long bureaucratic procedure awaits them from governing offices and/or financial institution should they decide to take the entrepreneurial pathway.

From the side of the academic staff also a number of impediments were raised which were mainly internal to the university. This is notwithstanding their positive attitude towards entrepreneurship and actual engagement in “personal income diversification strategies” outside the university setting. In fact it was due to these internal impediments that the academic staff opts to involve in externally financed projects. Two of the main reasons cited were Bureaucratic procedure and insufficient compensation. As one of the department heads bluntly put it

Nobody wants to bring external projects to the university because; it will take ages to get the money. Additionally, the university is only willing to pay a ridiculously low amount as compensation to the researcher[...] if I have to go for a field work, honestly speaking I need at least 3000 ETB³⁶ as a per diem allowance, but the university is willing to pay as low as 70 ETB [...] with this money I couldn’t even find proper accommodation; which means I have to add from my pocket. (AH5)

Second to that, limited space for bottom up initiatives was another impediment within the university. Although, their responses were not exactly identical most of them agreed on the fact that the space created by management of the university is not good enough. For instance, one of them stated that

³⁶ Ethiopian birr is the currency in Ethiopia and its conversion rate to 1 EURO stands at 24.2207 as of 24/05/2016 (Commercial bank of Ethiopia, 2016)

If you have a really good idea, there is no reason that it will not be accepted. I have seen initiatives from the academic staff, but I have to admit the culture of bottom up initiative is not well developed and more needs to be done to strengthen the involvement of staff. (AH6)

For some of the other respondents (i.e., AH5,AH2) good idea by itself is not good enough as they think Politics and personal ties play a key role in getting acceptance.

Another academic staff who has served in various capacities (director, dean) mentioned sudden discontinuities as another road block of entrepreneurial initiatives within the university. He gave a practical example of “*a staff development plan*” which made important improvements at the college before it was suddenly discontinued by a direct order that came in a top-down fashion.

We were making important strides with “the staff development initiative”. Countries such as Canada and Tanzania were even contacting us to draw lessons from our experience. And when it was suddenly discontinued it shocked everyone at the college. (AH1)

Lack of formal support system to turn ideas in to fruition was another impediment mentioned by the staff. In relation to this, it was pointed out by the interviewees that the entrepreneurial infrequent entrepreneurship training support at the university often targets students, disregarding the entrepreneurial skill gap amongst staff.

Lastly on a more positive note, the introduction of thematic and adaptive problem solving research, is promoting the undertaking of a more collaborative and practically relevant research at the case university (see section 5.3.2).

To recap, the reflection of the students and staff showed that both have a positive appraisal of entrepreneurial behavior. Moreover, a culture of Mode 2 research is emerging amongst academic staff, albeit at an early stage of development. On the other hand both the staff and students mentioned a wide range of inhibiting factors constraining entrepreneurial behavior within the university.

The implication is clear: without creating a supportive environment, both students and staff will not be motivated to involve in entrepreneurial practices and without their involvement entrepreneurial transformation is simply inconceivable.

5.3 The expanded development periphery

The third essential element of an entrepreneurial university is the expanded development periphery. As described in chapter 3, the development periphery has two primary functions within entrepreneurial universities. One, it promotes knowledge production within the university by breaking down disciplinary barriers and fostering cross-fertilization of ideas across disciplines. And two, it bridges the gap between the university and the outside world by providing the much needed formal point of interface. The development periphery is one of the

features of an entrepreneurial university that uniquely distinguishes it from traditional university which use to be loosely coupled with the external world (Etzkowitz, 2008).

Two main sub categories will serve as guide to discuss the status of the development periphery at the case university: the contribution of the periphery to knowledge production within the university, and the role of the periphery as a bridge to the external world. However, before discussing that a brief overview of the development periphery at AAU will be presented to provide proper context.

5.3.1 The development periphery at AAU (brief overview)

As can be observed from its organizational structure (see, fig2), the case university has a number of boundary spanning units that could be classified in to two: “administrative” and “academic” (Clark, 2004, p.84-86). As described in section 3.3.2 the “administrative” development periphery units refer to various offices within the universities that are established with the aim of facilitating/coordinating linkage with a wide range of external stakeholders and also internal collaborations. As such they will bring application oriented projects in to the university, where as the “academic” development periphery units, such as research centers, carry out the resulting projects.

Some of the administrative peripheral units have a relatively long existence within the university i.e., external relations office; while, some of them i.e., knowledge & technology transfer are the result of the two major reforms that were undertaken in quick succession over the last decade (AAU, 2011).

Firstly, the university undertook a reform in 2009, as part of a country wide government initiative to implement Business process reengineering (BPR)³⁷ in all public institutions (Aschalew, 2011). The new design identified ‘*Resource Generation, Mobilization, and Management*’ as an important support process for the achievement of the universities’ core objectives of teaching, research and community service (AAU, 2011). However, two years in to the implementation of BPR, the university realized that the reform has not brought about the expected result and that most of the deep rooted problems of the institution still prevailed (AAU, 2011). Consequently, the university initiated yet another major reform in 2012, which significantly altered the landscape of the development periphery (AAU, 2013a, 2015b, 2015c).

In terms of ‘Administrative’ development periphery units, the reorganization led to expansion. More precisely, a new V/P position under the title of ‘*Research and technology transfer*’ which housed ‘research institutes’, ‘community service’ and ‘Industry linkage and technology transfer’ was created (AAU, 2013c). This is in sharp contrast to the previous design where research and technology transfer were housed under two distinct V/P offices.

³⁷ the aim of BPR was to bring about efficiency and enhanced capacity amongst public institutions in Ethiopia, although preparation started in 2007, most entered the implementation in 2009 (Aschalew, 2011).

Additionally, another position (v/p for institutional developments) which facilitates diversification of funding was established. The office of institutional development constitutes “Business Development”, “Training and Consultancy and Endowment Office”; “Office of Buildings, Grounds and Infrastructure”; “Office of Projects Initiative and Development”; and “Office of Resource Generation, Mobilization and Management” within it (AAU, 2013c).

The establishment of the two V/P positions i.e., Research and technology transfer and institutional development has also resulted in the creation of further peripheral units. In particular, while the former office is facilitating the establishment of a business incubator, the latter contributed to the establishment of a business enterprise (Addis Ababa university business enterprise plc [AAUBE], n.d.)

Secondly, apart from the expansion of “administrative” peripheral units, the reform has also positively impacted the already existing “academic” peripheral units. To be more precise, it reoriented the focus of the research institutes at the university in to focusing mainly on research. This is in contrast to the situation prior to the reform where research centers were devoting half of their time for teaching activities (AAU, 2013a).

In general, the most recent reform the university undertook has positively impacted both administrative and academic development periphery units.

5.3.2 The development periphery and knowledge production within the university

As described throughout, one of the key objectives of the development periphery within an entrepreneurial university context is promoting cross disciplinary collaboration. In this respect the study indicated a dichotomy of result: positive and negative factors working for and against knowledge production.

On a positive note, it was found that the university is promoting internal cross disciplinary collaboration through “Thematic research”.

To elaborate, three types of research projects are undertaken at the university namely, thematic research, adaptive problem solving research, and collaborative research projects (AAU, n.d.-a). To start with thematic research the university defines it as a “*multidisciplinary [research], extending across more than one department/school/college and incorporating a number of research groups*” (AAU, 2016a, para.1). The themes are designed in a way that represents the national priority areas of the country and are financed through the state funding allocated for research. According to the research director currently, there are 49 ongoing thematic research projects at AAU each costing around 500,000 ETB. The second type of research, i.e., adaptive problem solving research, targets a particular societal problem to be addressed and is granted for an individual researcher rather than a team (AAU, n.d.-a). It is smaller in scope and usually takes shorter time to complete. Once again adaptive problem solving research is financed using state’s core funding for research. According to the director of research currently, there are 50 ongoing

adaptive research projects each costing approximately 100,000 ETB. Lastly, Collaborative research projects refer to any research that is done with external grants than states core funding.

Although, the universities considers all the aforementioned research streams essential, according to the director of research as well as some of the internal documents reviewed, the overall direction the university intends to take is towards ‘Thematic Research’ (AAU, n.d.-a, 2016a). Moreover, the funding ratio described above also clearly reflects the priority given to thematic research as compared to individual research.

According to one of the interviewees with an immense experience in various positions at AAU

Ever since thematic research started at the university, the academic staff has started collaborating fellow academics in other departments. However, it is a new phenomenon and there are a lot of clashes that emanate from personal, disciplinary and cultural differences. (AH3)

Understandably, some tensions are to be expected since inter departmental research collaborations are fairly new to members of the academic community at AAU. However, the trend is emerging i.e., (4 out of 6) stated to have collaborated with colleagues from other departments in either writing a research proposal, and/or conducting the actual research project. One of the interviewees (AH1) specifically mentioned that he is leading a thematic research that involves 15 academic staff from different departments within the college of education and behavioral studies. Hence, it can be said that the introduction of thematic research is clearly promoting cross disciplinary collaborations at the university.

On the other hand, when it comes to the role of “academic peripheral units” i.e., the research centers, in fostering collaboration within the university, results were indicative of below par performance.

To shade light on the above claim, the loose coupling between one of the research institutes (i.e., institute of educational research [IER]) and one of the colleges(the college of education and behavioral studies [CEBS]), at AAU can be presented.

As mentioned in chapter-3, CEBS is one of the oldest colleges in AAU (it was previously organized as a faculty). The college has five departmental units which focus on different aspects of education and one school of psychology. Currently, the college has more than 100 full time academic staff and offers bachelor, masters and PhD level programs.

On the other hand, Institute of Educational research (IER) was initially founded in 1968 within the then faculty of Education. However, in 1983 it was restructured as an autonomous research institute. Apart from its main research mission, it has also been engaged in teaching and

community service initiatives. According to the director, IER currently has its own dedicated staff (10 research staff³⁸) and its own budget.

Despite the communality of their objective³⁹ and the potential complementarities⁴⁰ that could be established, results of the study indicated that IER and CEBS appear to be disconnected. One of the interviewees described, the integration problem using the metaphor of “*people who live together but does not know each other* “. (AH5)

Another respondent (AH1) who had assumed leadership positions in both units (IER and CEBS) stated that both have a tendency to consider each other simply as a “backup” rather than engaging in a long-term and fruitful relationship

IER only seeks the help of academic staff from CEBS when their resource is stretched to the limit. I mean they only co-opt staff from us [CEBS], when they have more research projects than they can handle using their own staff.

The respondents from IER also acknowledged the existence of weak coupling with CEBS. Particularly he proclaimed that

this is [integration between IER and CEBS] one of the changes I want to bring about. I have raised this issue in various deliberations. And it is not only me but most of the staff from both sides is ready to create a meaningful relationship. But the leadership of the institution has to be willing first. DP2

Similar disconnections also seem to prevail between IER and the other research institutes within the university. As most of the interviewees stated the collaboration amongst the research institutes in the university is something that has been overlooked. Perhaps the response given by the director of IER best captures the aforementioned claim. After noting that there are no ongoing collaborative projects between IER and other research institute within AAU the director stated “*let’s simply consider it as a gap the university has to work on*” (DP3).

To recap, although the introduction of “Thematic research” by leadership is producing a very encouraging result in terms of fostering interdisciplinary research collaborations, the academic development periphery units (i.e., the research centers) are not sufficiently contributing to knowledge production within the university as they are loosely coupled with each other and with other educational units (departments).

³⁸ Research staff in the context of AAU is an academic staff with the responsibility of devoting 75% their working hours in research related activities and the remaining 25% for teaching related activities (AAU,2013b, p.70)

³⁹ The fact that both IER and CEBS consider research to be a key objective.

⁴⁰ IER could significantly benefit from the research capacity of the academic staff and graduate students at CEBS. Similarly, the senior researchers at IER could contribute to the research and education programs of CEBS.

5.3.3 The development periphery as a bridge to the outside world

The second key role of a development periphery in entrepreneurial universities is acting as a link between the university and the external world. In today's turbulent environment, the importance of such external collaboration cannot be emphasized enough. In that, apart from fostering the relevance of higher education institutions by increasing their impact, it will allow them to create a sustainable posture through a diversified funding base.

Four major sub categories will serve as a guide: collaboration with governing bodies, industry, local community and international organizations.

5.3.3.1 Collaboration with national governing bodies (Federal and city)

Clearly, one of the most important ways in which an entrepreneurial university can bring about a positive impact in its community is by working closely with national and regional governing bodies. Needless to say, these governing bodies also serve as an excellent source of income.

When it comes to the case university, a different level of linkage was reported between the national governing authorities and the city administration, the former being stronger than the latter.

To start with, the collaboration of the university with the city administration, it was reported to be very weak. In that, although, interviewees from both sides underscored the importance of jointly working together, they framed the status of the current linkage as very weak.

More specifically, the city administration does not explicitly specify the role of the university in its development plan (i.e., GTP⁴¹). As such there is neither a formal strategy nor a dedicated budget to capitalize on the expertise of the university. However, the representative of the city administration (ES1) mentioned that different units of the city administration can get the support of the university, if they deem such support will help them to achieve their specific plan. Nonetheless, he framed the collaborations as "*infrequent and limited in scope*". (ES1)

The director of knowledge and technology transfer at AAU also highlighted the existence of some limited collaboration with the various organs of the city administration, which is mostly undertaken in the form of training and consultancy.

When it comes to the reason behind the weak coupling, lack of awareness and dedicated budget were mentioned as the major roadblocks by the participants from the university (SC1, SC2, DP1).

⁴¹ The city administration has its own Growth and transformation plan (GTP) which is cascaded from the national GTP.

From the perspective of the city administration (ES1), on the other hand the two major contributing factors for the loose coupling are: the governance structure of the university and graduates outward mobility. To elaborate, as a public institute, AAU is accountable to the federal government rather than the city administration and according to (ES1) this is the major barrier of the collaboration. “*We don’t have the mandate to gear the focus of AAU, as it is administered by a federal charter*” (ES1). As a justification of the above argument he cited the much stronger relationship the city administration has with those educational institutions that are under its jurisdiction.

For instance the TVET [Technical and vocational education and training] colleges and kotebe college of teacher education are within our mandate. And we jointly work with them...we provide various support to TVET graduates to stimulate job creation such as land, loans and training. ES1

Secondly, (ES1) also mentioned that, the vast majority of the students come from different states in the country and tend to go back to their respective regions up on completion of their studies, whereas the students of the TVET colleges are primarily the residents of the city. As such, the focus of the city administration has been directed towards TVET colleges rather than AAU thus far.

When it comes to the collaboration of the university with the national governing bodies however, more encouraging results were obtained. In that, the government organs at national level appear to be more ready to utilize the expertise of universities. For instance the ministry of science and technology allocates a significant sum to support innovative research projects of universities (ES2). Other ministries have also shown their willingness to work with the university.

Consequently, a significant number of training and consultancy services are offered to various ministries of the federal government (AAU, 2014, 2015d). In this regard, two notable examples that gave the participants a sense of pride were ‘the grand Ethiopian renaissance dam project’ and ‘Yayu fertilizer project’ which are multibillion (ETB) projects, where the university is serving as a consultant.

However, even in the collaboration with federal governing bodies, the respondents from both sides (internal and external stakeholders) unanimously agreed that more work needs to be done especially considering the seniority of the institution as well the potential of its staff and students (SC1, AH1, DP1,ES1, ES2, ES4).

5.3.3.2 Collaboration with the industry

The second important way in which universities can contribute to sustainable socio economic development, while diversifying their funding base is by collaborating with the industry⁴². This collaboration has been given due attention by practitioners as well as distinguished scholars in the academic entrepreneurship literature (Clark, 1998, 2004; Etzkowitz, 2008).

In this regard, the data collected indicated that the universities linkage with the industry is very weak. In that, apart from the long standing practice of using student internships as a formal linkage mechanism, the university fails short of expectation in terms of forging more diversified and fruitful relationship with the industry. This can clearly be understood by looking at the very low number of collaborative projects that relate with the industry as compared to the total number of collaborative projects (see table 8 & 9 for instance). Similarly the very low income generated from the industry as compared to the other diversification techniques serves as further evidence (see the next section 5.4). This weak collaboration is also acknowledged by most of the participants of the study. Particularly, the following factors were mentioned as major barriers: infant industry, Lack of collaboration culture, incompatible culture, Distrust, and an industry filled with organizations with a follower mindset.

According to the respondents (SC1, SC2, AH2, ES2, DP2) the industry is at an infant stage of development and lacks the financial capacity to support university projects. Understandably, the Ethiopian economy being predominantly agricultural is characterized by underdeveloped industry (Gebreeyesus, 2013).

For AH3, however, as much as it is financial the problem is cultural. In that, *“since university-industry linkage is fairly new in the context of Ethiopia, both the university and the industry are yet to develop the habit of collaboration”*. In relation to the above point, *“incompatible culture”* is also mentioned as third inhibiting factor.

⁴²Although, the university has not yet set an explicit demarcation between industry and community, the following differences were detected during the interview. And this difference will also guide the discussion in this paper. The industry is thought of as medium to large size, for profit organizations engaged in various sectors in the country. The industry is believed to have financial capacity and hence any service rendered to the industry is provided for a fee, whereas the community often refers to individual households and or other smaller groupings in and around the university. And the service offered to individual households and other smaller groups is often offered free of charge with the label of *“community service”* (this is excluding the various formal degree programs offered by the university). For instance, a training program aimed at awareness creation about a certain problem that persists in the nearby society might be classified as community service. Similarly, training and other capacity enhancement programs, tailored towards micro and small business enterprises in the city might be again considered as community service. While, training for a medium sized business corporation fits the bill for an industry. However, obviously, the classification is arbitrary and at times, it leads to confusion.

As ES6 puts it

More often than not the industry is after immediate financial return, whereas the academia prioritizes rigorous evaluation of the problem at hand ...may be the professors want to include their masters or PhD students and all this is time taking. And I think this clash of culture is one of the challenges that are hindering university-industry linkage in Ethiopia.

Fourthly, “distrust” is also mentioned as another challenge.

In some cases there is also a tendency of protectionism from the side of the industry. May be their technology is new or have a new business process. So, when you approach them and lend a hand to solve their problem, they are not willing to accept the offer, due to this sense of “distrust”. AH3

Fifth, the fact that the business organizations in the industry lack the motivation to innovate as they are mainly focused on importing technology is expressed as one additional reason as to why organizations in the industry are reluctant to utilize the innovative potential of the university (AH7). Lastly, lack of understanding of the innovation capacity of the university was also another inhibitor mentioned.

However, it is worth mentioning that despite the low number of ongoing collaborations with the industry, over the past couple of years, the university has signed a memorandum of understanding (MOU) with some organizations which is the help of the development periphery (particularly by the “Office of the Director for University-Industry Linkage and Technology Transfer”). The purpose of the MOU is to lay the foundation for future collaborations.

5.3.3.3 Collaboration with the local community

As defined earlier “the local community” in this paper refers to individual households that live in and around the university. Forging a collaborative relationship with individual households and other small groupings that exist within the nearby community is of paramount importance for a developing country like Ethiopia, where the industry is underdeveloped and capacity deprivation is widely prevalent at all levels (Doh, 2012; Mugabi, 2014; Gebreeyesus, 2013).

When it comes to the case university, mixed responses were obtained from the interview. However, before discussing the interview results it is essential to provide some background information. To begin with, the university has identified “community service” as one of the core tenets of its existence and allocates approximately 12% of its annual budget (i.e., 130,269,300 ETB) towards such end. Secondly, the universities outreach activity is coordinated by the “Office of community service (OCS)” which falls under the purview of V/P for knowledge and technology transfer. The office is run by one director and four supporting staff. Lastly, according to the director of the community service, the majority of the community service budget (i.e.,

60%) is allocated to The College of Health Sciences (CHS), which in addition to teaching and research provides the service of a medical care to the community.

That being said, the responses from the majority of the participants (especially the response from the external stakeholders) were indicative of below par performance. For instance, (ES1) after acknowledging the contribution of students from CHS who provide free service in different hospitals in the city via internship described the university's community engagement as unsatisfactory. He further labeled the research undertaken by the staff and students of the university as "*a research for merely warming the shelf*" rather than solving the actual problems of the society. Another respondent (ES6) reinforcing the claim made by ES1 labeled the university as an "*island*". ES3 and ES4 also expressed that community service is not the strongest suit of AAU by pointing out other public universities which they believe are significantly outperforming the university.

For two of the respondents however, AAU has been actively engaged in community service over the past several years. (ES2) even claimed that AAU is more engaged than other public universities in Ethiopia but the university is simply not good at publicizing its achievements. The other respondent who spoke in favor of the performance of the university also gave some personal examples and highlighted the lack of proper documentation (DP1). However, both conceded that there is a room for improvement considering the potential of the university.

Likewise, the review of the internal documents showed a limited number of community service initiatives over the past few years. Particularly, ever since the university was reorganized in 2012, the community service office has coordinated the dissemination of some selected research results to the community, the provision of entrepreneurship training for graduating students and the promotion of student volunteerism (AAU, 2016b).

Lastly, as regards the challenges, the Lack of dedicated finance to the office of the community service, the lack of well elaborated policy guideline, overlapping tasks and conceptual ambiguity were cited (DP1, DP5, DP6, DP7).

5.3.3.4 Collaboration with international partners

In today's increasingly globalised world, collaborations are not limited to local partners. International partners similar to the internal stakeholders described above could play a key role in terms of enhancing the relevance and reach of HEIs.

Interestingly enough, the strongest collaboration of the case university is with international development partners. If one looks at the number of active projects and amount of diversified income, collaboration with the international community is clearly the strongest suit of the case university (see section 5.4.2.1 for detail).

In a nutshell, the university is developing a culture of interdisciplinary collaboration internally, “Thematic Research” albeit it is at an early stage. The “academic development periphery” units (i.e, research centers) on the other hand, seem to be disconnected from each other and other disciplinary units in the university. Secondly, with respect to linkage with external stakeholder, generally an unsatisfactory performance was reported with varying level of strength across different stakeholder groups. Relatively speaking, collaboration with international partners and national federal governing ministries was stronger while collaboration with the local community, city administration and industry were all found to be underwhelming.

5.4 Diversification of funding at AAU

5.4.1 State funding

The Ethiopian government considers HEIs as vehicles to sustainable economic development (MoFED, 2010). As such the government has been heavily spending in HE expansion over the past two decades. The trend of HE financing in Ethiopia is that all public institutions are nearly completely financed by the state (HEP, 2009, art.86). That said, However, public universities are allowed to engage in income generating activities (HEP, 2009, art.66 and 67).

The ministry of finance and economic development (MoFED) is the government organ that is responsible for allocating annual budget for universities in Ethiopia. The allocation is made on four major categories pertaining to the achievement of the core purpose of universities: teaching and learning; research and development; community service; and administration (MoFED, 2015).

AAU being one of the oldest and largest higher education institutions in the country has been the highest recipient of state funding (see table 7). As can be seen in the table the university is not only the highest recipient (in all the categories) but also ranks top in terms of self generated income. However, the self generated income (52,618,800 ETB), represents less than 5% of the total budget (1,088,029,400 ETB) which indicates a strong reliance on the state.

However, care should be taken while interpreting the internal revenue. In that the internal revenue in table 8 represents the net profit the university earns from its diversification activities without counting the financial support received from external partners for undertaking various research projects. i.e., of the total 650 million ETB support the university received from external partners (see section 5.4.2.1), only the overhead⁴³ charge is considered as internal revenue by MoFED while allocating annual budget. However, the external financed research project clearly represents an enhanced institutional capacity and should be considered as such.

⁴³ The over head charge represents the percentage the university charges for any externally financed project.

Table 7 Top seven recipients of state funding (from sep. 2015 to sep. 2016)

University	Annual budget					
	Internal revenue	Administration	Teaching	Research	Community service	Total budget
Addis Ababa university	52,618,800	303,086,200	577,861,500	76,812,400	130,269,300	1,088,029,400
Jimma university	8,176,400	289,681,600	467,362,200	23,562,000	168,105,700	948,711,500
Bahirdar university	22,882,600	271,989,700	515,123,800	50,216,100	16,050,100	853,379,700
Mekele university	39,679,650	203,680,200	462,767,050	12,686,250	87,377,780	766,511,280
Hawassa university	20,531,400	245,221,500	400,512,300	12,709,300	73,893,900	732,337,000
Haramaya university	9,990,000	214,155,700	394,897,200	17,491,600	53,424,700	679,969,200
Gonder university	19,598,400	396,338,000	170,250,000	11,852,300	89,265,700	667,706,000

Source: compiled by author using data from MoFED (2015)

5.4.2 Third stream income at AAU

Five principal diversification strategies are currently in place at AAU: income from collaborative research projects, tuition fees, business plc, training and consultancy and other income sources.

5.4.2.1 Income from collaborative research projects

The first and the most significant external fund at the university come from collaborative research projects. As mentioned earlier, collaborative research projects are financed by external stakeholders other than the states direct budgetary allocations. In this regard it can be observed that, although the university acquires fund from both national and international stakeholders, the vast majority of them are international partners. As of this year there are a total of 78 active collaborative research projects, with an estimated total grant value of 650 million ETB, out of which only seven of them are financed by local partners (AAU, 2016a). The most frequent local collaborative research partner is ministry of science and technology, which is currently financing three projects costing a total of 11 million ETB. The international grant providers constitute a wide range of groups including inter governmental organizations (i.e., AU, UNICEF,WHO); universities (i.e., University of Bergen, John Hopkins University, the university of Toronto, Ghent University), business corporations (i.e., Google.inc) and other development partners (i.e, NUFFIC, NORAD).

Apart from financing the total cost of the project, the grant provider is expected to pay some percentage of the total cost of the project to the university as overhead charge. Although, the overhead charge used to vary from project to project, according to the new directive of the university the minimum rate is set at 12% (AAU, 2016a).

5.4.2.2 Income generation through a business enterprise

The second income diversification strategy is through a business enterprise. AAU has established a business enterprise in January 2014 with a capital out lay of 10 million ETB. As it is stated in its profile, “*the goal of the enterprise is to maximize profit by delivering superior performance to customers*” (Addis Ababa university business enterprise plc [AAUBE], n.d.)

Like any other business enterprise in Ethiopia the enterprise has the mandate to engage in a wide range of profit making activities including “*Agro-Industry, Manufacturing, Consultancy, Hotel management, financial service, Import and export, wholesale and retail trade*” (AAUBE, n.d.).

Currently, the enterprise houses a number of income generating activities undertaken by the university. specifically, the enterprise is responsible for a printing House, Book Center, Wood and Metal Workshop, restaurants (i.e., three cafeterias within different colleges of the university and one cafeteria in the universities museum) , agro industry (i.e., Meat, Dairy, poultry) and some consultancy services (AAUBE, n.d., P.1).

However, it should be noted that all this income generating activities precede the establishment of the enterprise and that the formation of the enterprise is simply to strengthen and expand the income generating capacity of the university by professionals with “*proven track of records*” (AAUBE, n.d., P.6). The enterprise is on course to expand its operation by offering Engineering Consultancy, Dairy, Poultry and Fattening, Multimedia, Theater and Film, Public Accounting, and other Specialized Training and Consultancy services (AAUBE, n.d.).

According to its “profit or loss” statement, (for the period ending 07 July 2015), the enterprise generated a total revenue of 7,762,003.00 ETB. Out of which 7256946 ETB was an expense (i.e., cost of production/sales; general and administrative expense; gross profit tax) leaving a net profit after tax of 505,056.01 ETB⁴⁴ (AAUBE, 2015).

⁴⁴Item level income statement was not accessible as some of the income generating activities are under other offices within the V/p for institutional development and the university is in the process of shifting them to the business plc. This is not meant to diminish the great effort made by the officers at institutional development to provide me with the necessary data for the research.

5.4.2.3 Income generation through tuition fees

The third income diversification strategy of the university is charging tuition fees. Although the Ethiopian law dictates that public universities are not allowed to collect tuition fees from regular students⁴⁵ at undergraduate level, they are entitled to do so from, post graduate and doctoral students⁴⁶; extension students⁴⁷, distance and continuing education students, summer in service students⁴⁸ and international students⁴⁹ (see HEP, 2015, art.91; AAU, n.d-c)

According to, (DP4) the money collected from application fee and tuition fee is transferred in to a special account managed by the budget and finance directorate of the university. Unfortunately, the total amount of income raised through tuition fee was not accessible at the time of data collection. However, according to the participants of the interview who have closely worked with continuing and distance education of the university a significant amount of income is generated from tuition fee.

5.4.2.4 Training and consultancy

The fourth important income generation strategy utilized by the university is offering training and consultancy service to various stakeholders. To this end the university has established training and consultancy center under the V/P for institutional development. The purpose of the center is to help resolve the capacity deficits the country is facing at various levels and sectors. In line with that the center has identified 523 broad areas of training and consultancy, which will be customized to the specific needs of customers (AAU, n.d.-a). Accordingly, the university has been offering training and consultancy services to a wide group of external stakeholders. As can be seen in table 8 & 9 the university has raised a minimum⁵⁰ of 11,160,411.5 ETB and 4,977,191.25 ETB as a gross income in 2014 and 2015 respectively.

⁴⁵ 'Regular student' shall mean a fulltime student who is enrolled in a regular program.(AAU, 2013c, p.5)

⁴⁶ Post graduate and PhD students are expected to pay tuition fee per credit hour. However, if they are academic staff coming from other public universities they are exempted of any charge (HEP, 2009, art. 30/7)

⁴⁷ Extension students are those enrolled in evening and week end classes and they are also charged tuition per credit hour. Extension students could be self paying but in some cases their organization covers the cost.

⁴⁸ Summer in service students are mainly high school teachers in different parts of the country and they attend programs offered intensively every summer (July and august) until they satisfy the credit hour requirement of a degree. Their cost is covered by regional government.

⁴⁹ The university generally charges a higher tuition fee for international students, although the rate slightly varies amongst East African countries, other African countries and the rest of the world (AAU, n.d.-c).

⁵⁰ The word minimum was used because some of the training services which were offered via the business plc are not included in the table.

Table 8, brief summary of gross income from training & consultancy (2006 e.c.)

Institutions	Service offered	Number of participants	Gross income in ETB
Fana broadcasting corporate	Training	30	NA
Ethiopian sugar corporation		52	NA
The Ethiopian Mapping Agency (EMA)		5	NA
Ethiopian postal service		8	NA
Ministry of urban development and housing		32	140,000.00
Ministry of federal affairs		75	115,200.00
Ministry of industry		5	35,700.00
Ethiopia Ministry of Culture and Tourism		110	161,000.00
Ethiopian Road Transport Authority		30	229,400.00
Ethiopian Wildlife Conservation Authority(EWCA)		25	85,400.00
Ministry of Communication and Information Technology (MCIT)	Consultancy	NA	2,264,362.85
Radar technologies institute		NA	3,497,930.65
Ministry of Transport Ethiopia		NA	4,421,418.00
The Addis Ababa Chamber of Commerce and Sectoral Association		NA	NA
Hawasa and Haramaya Universities		NA	NA
Abdulhafiz insecticide providing plc		NA	30,000.00
Adami Tulu Pesticide Processing S.C		NA	180,000.00

Source: AAU (2014)

Table 9 brief summary of gross income from training & consultancy (2007 e.c.)

Institutions	Service offered	Number of participants	Gross income in ETB
Authority for Research and Conservation of Cultural Heritage		5	35,700.00
Ethiopian Road Transport Authority		30	229,400.00
Ethiopian human right commission		25	85,400.00
Ministry of Communication and Information Technology (MCIT)	Consultancy	NA	1,132,188.25
Radar technologies institute for Ethiopian agricultural transformation agency		NA	1,728,000.00
Ministry of Transport Ethiopia		NA	1,547,503.00
Adami Tulu Pesticide Processing S.C		NA	219,000.00

Source: AAU (2015d)

5.4.2.5 Other incomes at AAU

In addition to the four major diversification strategies discussed above, some other income generation techniques are concurrently employed at the university. The first source is the ministry of education (MoE). As an informant from IER stated, the institute sets national entrance examination every year and collects fee for its services from the ministry, who in turn charges the other public universities in the country. Secondly, the university charges a fee for handling international standard tests such as ETS, SAT, TOFFEL GRE, and ACCA which are conducted in its testing center (AAU, 2013c, p.132). Thirdly, the university in its technology institute has workshops with advanced machineries that can be used to test the quality of certain products. As such the university collects some fee from government and non government organizations who seek its services. Lastly, the College of Health Sciences has a specialized hospital (Tikur Anbessa Hospital) that provides medical care for a moderate fee⁵¹.

To recap, although, there is no consolidated financial management system that accurately aggregates and reports the money raised from different sources; the various bits of information individually collected from different units in the university indicate that a wide range of diversification strategies are currently in use. Secondly, as mentioned in the previous section, the money is predominantly raised from few of the sources (i.e., international partners and federal government offices), while the contribution of the other key external stakeholders (i.e, from the industry and city administration) is very much limited.

5.5 The integrated entrepreneurial culture

Culture is another essential element of an entrepreneurial university as it has the ability to either facilitate or impede behavior. Perhaps before discussing the findings of the study, it is essential to revisit the conceptualization of “integrated entrepreneurial culture” provided in section 3.5.

Organizational culture basically refers to the shared values, norms and assumptions that guide behavior within an organization (Gebremeskel, 2015). And it should be noted that these set of core values and assumptions are constructed and reconstructed by the interaction of individuals, as such they evolve over time (Schien, 2004). In this token entrepreneurial culture can be considered as a culture (i.e., values, norms, assumptions) that promotes entrepreneurial behavior (such as innovation, experimentation, risk taking, openness to change and adaptation) (Shattock, 2008; Etzkowitz; Clark, 1998). Lastly, the use of the word “integrated” in combination with entrepreneurial culture is intended to emphasize that those entrepreneurship promoting traits should be commonly shared by all members of the organization (i.e., leadership, staff, and students).

⁵¹ The amount of money raised by the specialized hospital was not accessible during data collection. However, the purpose of the hospital is not profit making.

That being said, in this section four sub themes will guide the discussion, three of which are innovation promoting cultural traits (risk taking culture, collaborative culture and openness to change), while the last sub theme corresponds to the actual engagement of academic staff and students in enterprising behavior.

5.5.1 Collaborative culture at AAU (horizontal collaboration)

Collaborative culture can be considered as an important enabler of successful entrepreneurial transformation (Clark, 1998). It is through this collaboration (across the various disciplinary units of the university) that ideas get cross fertilized, mature and materialize. Besides, societal problems more often require multiple perspectives; as such, collaboration in and across disciplines is highly desirable (Gibbons, et al., 1994, p.7). It should be noted that both vertical (central administration versus the academic staff) and horizontal collaboration (amongst academics and students in different disciplinary units) are essential for entrepreneurial universities. Of these two collaborations this sub theme will address the latter (and the former will be addressed under section 5.5.3).

With respect to the collaboration culture of the academic staff at the case university results indicated that individual culture is giving way to team culture. As discussed in section 5.3.2 ever since the university set “*thematic research*” as its priority the academic staff has begun to develop a habit of collaboration with their colleagues in other departments. However, it is still at an early stage and probably takes time to realize a status of culture. Moreover, as one of the interviewees pointed, the rate of collaboration drops as the disciplinary variation increases.

There are more group research projects from the same department compared to a collaborative project that involve different department and the number gets smaller when you compare across college collaborations (DP1)

Regarding the collaboration of the university staff with external stakeholders, the result is encouraging. As discussed in section 5.4.2.1, there are 78 active collaborative projects with an estimated gross value (650 million ETB) and the vast majority of these grants are initiated and secured by the staff of the university. Moreover, in order to diversify their personal income the staffs also collaborate with external stakeholders outside their university working hour (see section 5.5.4). Hence it can be said that the staff has a good experience of collaborating with external stakeholders.

When it comes to the staff-student research collaboration, a varying level of collaboration was reported across educational levels (bachelor, masters and PhD) and disciplines (Education and behavioral studies versus engineering students). In that, a very weak of collaboration culture is evident between bachelor level students and academic staff. While a weak level of collaboration was reported between masters level students and academic staff (excluding master’s thesis supervision) and lastly, a relatively stronger collaboration culture was reported between doctoral students and academic staff of the university.

Discipline wise, interviewees from technology related disciplines reported more collaboration with academic staff, compared to the participants from college of education and behavioral studies.

5.5.2 Risk taking propensity

Another feature of an entrepreneurial university is the willingness of its members to assume the risk associated with new and unconventional pathways. In fact this is one of the features that distinguish an entrepreneurial university from a traditional one (Shattock, 2005, 2008; Barnett, 2005). As Shattock (2008) in the absence of risk taking behavior the university will find it difficult to achieve institutional distinctiveness.

Risk taking behavior within the university is very much a function of what leadership does with the total budget it has at its disposal, i.e., whether leadership backs up new promising ideas and approaches with uncertain outcome or go for standard ideas and approaches with more certainty?

In this regard the result of the study showed a very limited risk taking behavior in the case university. Firstly, the university does not have any separate financial pool for supporting innovative activities apart from its formal research budget. But even then the university allocates only around 7% of its annual budget to research activities (MoFED, 2015). Thirdly, the research budget is almost uniformly divided amongst the accepted proposals (i.e., a 100, 000 and 500, 000 is allocated for each adaptive and thematic research respectively) which means, the current system does not provide financial backing for research projects that cost more than those research caps mentioned above no matter how promising they are.

This problem has been voiced by many of the participants in the interview. The story shared by one of the interviewees from the institute of technology is a case in point

....Here at the school we formed a team and developed a proposal to make a prototype of “product X”, and the estimated cost of the product was I think 1 million ETB. but the university leaders have been pushing it around from one office to the other [...]the product is based on the algorithm developed by a graduating student at the school. Mind you the student has already demonstrated that the innovation is functional by developing one prototype as part of his thesis, so the risk is not that high. But there is no formal system to support innovation, other than lip service, I doubt it if the leaders have the knowhow to implement entrepreneurship. AH2

This idea is also shared by the informant from the knowledge and technology transfer office at the institute, who asserted that their office does not have a dedicated budget to support technological innovation.

Although, we try to facilitate the purchasing of some raw materials for staff and students to develop a prototype, it's up to the finance unit to decide on whether to buy the raw materials or not as we don't have our own budget. DP9

This hesitance of leadership to financially back up innovative ideas is also reported by most of the students who affirmed that no support is provided to turn the ideas they bring from their internship place in to a prototype⁵². Moreover, the very low budget allocated for students thesis project is another manifestation of the low risk taking behavior of management as it inhibits student creativity.

5.5.3 Openness to change (vertical collaboration)

As highlighted throughout this paper, entrepreneurial transformation is conceived of as a collective endeavor (Clark, 2004, p.45). In line with that "openness to new ideas" is considered as an essential enabling trait of entrepreneurialism. This is simply because, if there is a resistance either from management or the academic community, the new ideas cannot be implemented.

To start with the openness of the academic staff⁵³ at the case university, they were considered as not being ready to change by the central administration. Specifically, While, (SC1) framed them as "*reluctant to change*" SC2, described them as "*lacking the necessary motivation to internalize and own the reform agendas of the university*".

The academic staff on the other hand, after acknowledging that most of the staffs are not enthusiastic about the reforms that took place in the university over the course the past six years, blamed the strictly top-down approach followed by leadership for the resistance. As (AH2) reflected

For me, I am not really bothered with where the idea comes from. It is fine if the idea comes from top management and even from the ministry as long as it's a good idea but the problem is the approach. Rather than sending a short letter stating "do this and that"; the right approach is to engage the staff in the process.

Another academic staff (AH6) stated "*what we are lacking in those top-down reforms is a real debate*" he went on to state that, the staff does not even sufficiently know what some of the reforms entail " *To be honest I don't really know what KAIZEN⁵⁴ is*" (AH6). The third respondent even refrained from calling it "resistance"

⁵² Although one of the students said that she got the support of her supervisor and the university to develop her prototype in the university, the majority has said that they are unaware of such possibilities, which shows that the at least, the support system is not formalized.

⁵³ Note that the steering core was referring to only the academic staff, (excluding students) while they were speaking about internal reforms and transformations

⁵⁴ KAIZEN is one of the reforms implemented at AAU with purpose of improving quality.

I don't think there is any staff that does not want to make positive contribution but the reform approach followed so far is haphazard, there is no organization to it, there is no proper involvement [...] I wouldn't call it a resistance; it is just a lack of proper system. Besides the staff won't say no, they just won't do it; they will just enter the implementation phase with little interest and commitment. DP2

Finally, one of the participants pointed the possible tension between the expertise power of academics and the positional power of the management *"the staff should be approached systematically. You know, they are all specialists of their field, you just cannot simply tell them to do something, because they will question you, they will challenge you"*. (AH1)

Indeed, academics should be approached systematically as they are authoritative in their own field of study. As Clark (1983, p.33), notes *"each disciplinary unit within the enterprise has self-evident and acclaimed primacy in a front-line task"*.

When asked about the openness of top management for bottom up ideas on the other hand, most of participants were dubious as to the existence of real spaces. For instance one of the participants expressing his opinion regarding bottom up initiative said *"I am not really sure...I could not quite recall any institution wide reform that was initiated by the staff. I think Part of it is due to lack of support from top management...but to be fair, the staff also does not propose many reform ideas"*. AH7

Another participant after expressing his hesitance about the openness of management stated *"If the idea is really good, may be they will accept it"*, (AH9) While the other respondents brought personal ties and political relationship in to the equation by stating that *"without good relationship with management it is virtually impossible to get your reform agenda across and secure the required financial support"*. AH5

In a nutshell, the result of the study showed that there is some level of resistance from both sides (the steering core and the heartland) at the case university but the "resistance" from the side of the academic staff is mainly due to the flawed approach followed by top management.

5.5.4 Enterprising culture at AAU

According to Clark (1998), entrepreneurial universities are enterprising in their very nature. Cambridge advanced learners dictionary defines enterprising as *"good at thinking of and doing new and difficult things, especially things that will make money"* (Cambridge, 2008). Of course, how this enterprising behavior will emerge and flourish in the university is highly connected to the existence of entrepreneurship enabling traits discussed above (i.e., openness to change, collaboration and risk taking) and therefore should be viewed in relation to them.

Having said that, attempt was made to get insights about the existence of enterprising culture at the case university drawing on quantitative (document analysis) and qualitative data sets

(interview). The use of quantitative data is considered relevant for this particular theme because, the number of technological innovations coming out of the university and also the number of startups initiated by staff and/or students of the university can serve as important indicators of the enterprising culture of staff and students.

Firstly, the data extracted from the internal data base of Ethiopian Intellectual Property Office (EIPO) revealed a very low number of patents registered in the name of the case university. Particularly only 3 patents are registered in the name of AAU out of the 916 patents granted by EIPO since its establishment in 2003 (EIPO, 2016). However, it's very difficult to make any premature conclusions based on this figure alone because the university does not have institutional intellectual property policy⁵⁵ and therefore the staff and students might have simply been making personal patent application without specifying their institutional affiliation. It is therefore essential to evaluate this figure in light of the interview data collected.

Secondly, attempt was made to determine the number of startups by the university (staff and current students and alumni) by contacting the ministry of trade and investments (the body responsible for issuing business registration and license in Ethiopia). However, it was not possible to determine the startup rate associated with the university staff and students, because data about universities is not systematically stored⁵⁶. Again the lack of systematic data at the ministry of trade, as well as the lack of tracer research by the university, makes it impossible to conclude based on quantitative data.

When it comes to the qualitative data, the responses were indicative of a low enterprising culture amongst students, while a contrasting “enterprising culture” was observed in academic staff's behavior in their life within and outside the university.

Specifically, the response collected from both internal as well as external stakeholders indicated that the students have low enterprising culture. “*Job seeking attitude*”; “*low entrepreneurial spirit*”; and “*low internal locus of control*” are some of the phrases that are used by the respondents to describe the student's behavior (ES1, ES4, AH4). This is also consistent with the response the students themselves gave about their entrepreneurial intentions (see section 5.2).

The academic staffs on the other hand were characterized as very enterprising in their life outside the formal working hours, while showing limited entrepreneurial engagement in their formal working hours at the university. To elaborate, most of the academic staff interviewed stated that they are currently engaged in some form of “personal income diversification strategy”. This could range from running their own business enterprise (such as research and consultancy firms) to additional teaching loads in and outside the university. The most commonly cited reason for this active engagement in personal income diversification activities is the insufficiency of monthly remuneration received from the university.

⁵⁵ At the time of data collection the university was already in the process of developing institutional IP policy.

⁵⁶ This because most business licenses does not require university qualification

When it comes to their entrepreneurial engagement within the university setting however, it is rather limited. This could again be traced to the lack of the other entrepreneurship promoting traits described earlier (such as lack of openness and support from management for bottom up initiatives) among other things.

5.6 The dynamics of the entrepreneurial elements at AAU: Interconnections and loopholes

As it is illustrated in chapter 3, the entrepreneurial elements Clark identified exist in a mutually reinforcing, reciprocal relationship, such that the status of each element depends on the status of every other element. For instance, without support from the steering core, bottom up ideas will not surface let alone flourish in the organization; Similarly all of the other elements are interrelated and interdependent See (Table 5). It is therefore of paramount importance to evaluate how each element is facilitating or impeding the development of the other with regard to entrepreneurialism.

Admittedly, since it is difficult to describe each element without taking in to account its impact on the other elements, the dynamics (to an extent) has already been described under the previous themes. However, even at the risk of repetition, it is essential to illuminate on the dynamics of the interrelationship as a separate theme.

5.6.1. The steering core and the academic heartland

Entrepreneurialism within an academic setting is a collective endeavor and hence requires organizational wide involvement including students (Clark, 1998; Etzkowitz, 2008). It is therefore very much a function of, whether leadership creates a space and provides support for the academic staff and students and whether or not the academic heartland capitalizes on this space and support.

In this regard, as described in section (5.1.1) the data from the interview as well as internal document analysis showed that most of the reforms at the case university follow a strictly top-down approach and that the space for bottom up initiatives is very much limited. This is despite the fact that on paper, the structure of the university shows the involvement of the academic heartland in decision making process.

To elaborate, members of the academic units make up the largest proportion of the universities senate (AAU, 2013b, p.9). Moreover, academics are involved in the three basic committees (Executive, Standing and ad-hoc) that are formed by the senate (AAU, 2013b, p.12). However, the major challenge is that the university is accountable to the board, which is mainly formed by the ministry. As a result most of the reforms of the university have been spearheaded by the ministry rather than the academic staff within it. On the same token, although students are represented by two representatives, their involvement is more sentimental than practical. It can therefore be said that, as it stands the space for bottom up initiatives is limited, this includes the space the leaders themselves (President, vice presidents and directors) have.

When it comes to practical support for entrepreneurial initiatives, once again it was found to be limited. Firstly, in terms of support for students, it appears that both technical and financial support are lacking. Apart from one course on entrepreneurship which is offered mostly during the last semester⁵⁷ and other highly intermittent motivational events, there is no formal platform to get technical support regarding entrepreneurship in the university. Similarly, students were equally vocal about the lack of financial support to transform their innovative ideas in to an actual product. This is in addition to, the other impediments i.e., teaching and internship related problems mentioned in section 5.2.3.

Due to the aforementioned inhibiting factors (at least, partly), most of the students are not currently engaged in entrepreneurial activities and more strikingly they do not intend to, in the near future.

The academics side of the story is largely the same. They are deprived of both technical and financial support to engage in entrepreneurial practices within the university, not to mention the bureaucratic procedures and lower remuneration associated with bringing in external projects. Consequently, the enterprising behavior of academic staff is more evident outside the university than it is within the university.

5.6.2 The steering core and the development periphery

The university has already recognized the need to make entrepreneurial transformation as it is reflected in the reform undertaken in 2012. As mentioned in section (5.3.1) the reform led to the establishment of “*v/p for knowledge and technology transfer*” which housed “*research institutes*”, “*community service*” and “*Industry linkage and technology transfer*” under it.

However, the administrative peripheral units do not have a dedicated budget to allow them discharge their duties effectively. This holds true both for the peripheral units at the university level and the peripheral units at college and institute level. And this, has limited their ability to facilitate and support entrepreneurial ideas of the academic heartland. As one of the respondents put it “*It is like being asked to run with your hands tied*” (DP9). Additionally the lack of institutional wide guideline to clearly specify the boundaries and interrelationships between different peripheral units was reported as another bottleneck. Particularly, the lack of proper guideline is reported to have created confusion and role ambiguities amongst employees as to what constitutes “*community service*” and “*Industry linkage*”. Moreover the lack of an overarching guideline has also made its fair share of contribution to the weak interconnection amongst the development periphery units within the university.

To sum up, although the steering core has recognized the need to promote entrepreneurialism and opened additional peripheral units to facilitate the transformation, it did not create the

⁵⁷ While interviewees from institute of technology stated that there is one course on entrepreneurship, those from college of education and behavioral science reported that there is not even a single course on entrepreneurship.

necessary platform (financial and otherwise) to allow the peripheral units discharge their duties effectively. And this as we shall in the next section has prevented the development periphery from firmly establishing themselves as legitimate units in the eyes of the academic staff.

5.6.3 The development periphery and the academic heartland

As Clark (1998, 2004), notes the new managerial values espoused by the peripheral units might not be warmly welcomed by the academic who are primarily driven by academic values. Consequently, peripheral units might find it difficult to legitimize their existence alongside disciplinary departmental units.

Indeed, the development periphery units at the case university have not yet firmly established themselves as a legitimate unit. However, the reasons are not mainly clashes of values (basic vs. applied) as anticipated by Clark (1998), rather it has to do with the limited capacity of the development periphery to provide real support.

As described in section (5.2.1), the academic staff evaluates entrepreneurialism and its values in a positive light; as such they consider the existence of boundary spanning units desirable. In fact, staff and students want more peripheral units that could facilitate and support their innovative endeavor. Hence, the lack of credibility of the existing peripheral units is largely due to their ineffectiveness.

For instance, even if all of the interviewees from the steering core (SC1, SC2, SC3) mentioned the establishment of an “Incubator” as a major step taken by the university to bring about entrepreneurial transformation, the personal visit made to the “Incubator” site revealed that even the infrastructural requirements of the facility are not completed, and as a result the five tenants who were supposed to move in to the “Incubator” over a year ago have not started. Similarly, the academic peripheral units (i.e., the research centers) although they have long years of existence, have faced sharp criticism from the academic staff for staying isolated from other relevant academic units within the university.

To sum up, it can be said that, as it stands the academic community has a lot of reservation about the administrative and academic peripheral units in the university, not because of their purpose rather due to their ineffective performance thus far.

5.6.4 The use of diversified money

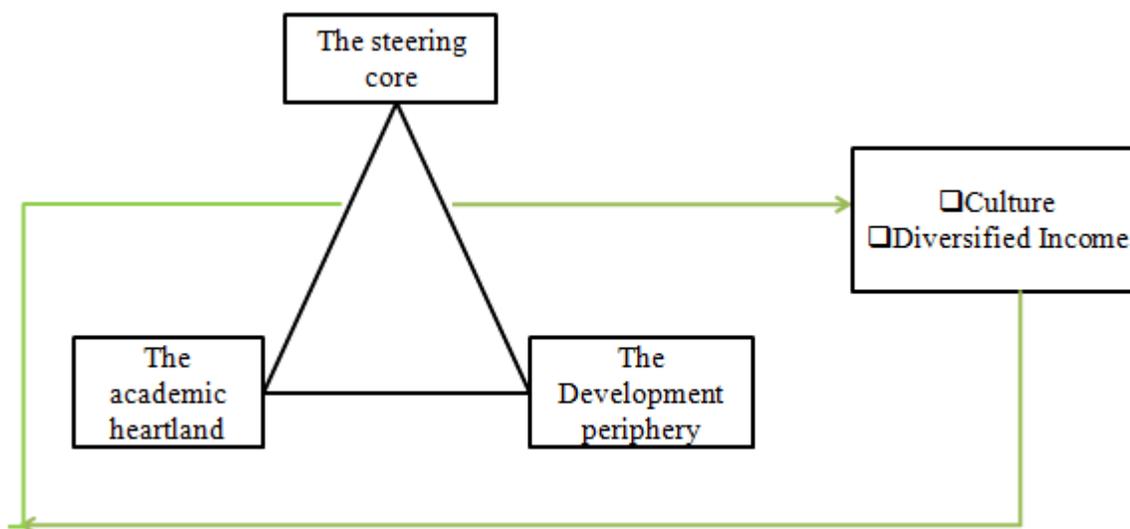
The entrepreneurial elements are assumed to have a reciprocal relationship, as such the diversified funding base can be considered as an outcome of the interaction of the steering core, the academic heartland and the development periphery units; at the same time it can be considered as an input that comes back to moderate their interaction (see Figure 4 below). Put differently, the use of money that is diversified in one cycle will have an impact on the amount of money that will be diversified in the next cycle. Meaning that, if the diversified income is

used to stimulate and support more innovative initiatives; it will likely lead to more sustainable income, allowing the university to break away from the control of the state. In this token, it can be argued that, how the diversified money is used is as important as how much money is diversified (Shattock, 2010).

When it comes to the case university, firstly it can be said that, the loopholes that exist in the interconnection amongst, the steering core, the academic community and the development periphery units described above have been constraining the diversification of funding.

Secondly, when it comes to the use of the money diversified, the action plan of the university for the current Ethiopian year (Sep 2015-august 2016), states that the university has been returning on average 300,000,000 ETB every year as a surplus to the ministry, until 2014 (AAU, 2015b). Although the rate has significantly dropped, the university has also returned a significant sum as a surplus in the previous fiscal year (AAU, 2015b). This is despite the fact that lack of financial resource is raised as one of the major challenges of the university.

Figure 4, the dynamics of the entrepreneurial elements



Source: Developed by Author based on Clark (1998)

5.6.5. Culture as a collective outcome of the interaction of the other four elements

Like, the diversification of funding described above, culture exists in a reciprocal relationship with the other elements and hence could be considered both as an output and input at the same time (see figure 4). Culture is an outcome in the sense that it is constructed and reconstructed by the interaction of individuals including but not limited to, leaders, staff, students. And it is an input because it has the power to influence behavior within the institutional setting. Hence it can

be said that, as much as it is affected by the other four elements, it also shapes and moderates them.

When it comes to the status of entrepreneurial culture at the case university, it can be said that it is underdeveloped. Once again this is largely due to the bottlenecks that exist in the interconnection amongst the other entrepreneurial elements discussed above. To elaborate, because the steering core does not create sufficient spaces and provide the necessary financial and technical support, all the innovative ideas raised by the academic staff and students could not reach in to fruition. And this lack of support to those staff and students, who came up and proposed innovative ideas, discourages others not to propose their ideas to management. As a result there is low enterprising culture within the university setting.

The stage of cultural development at the case university can be summarized using the Figure developed in chapter three based on Clark's (1972, 2004), description of cultural progression (see figure 1).

Figure 5, the stage of entrepreneurial culture development at AAU



Currently, the university is perhaps at the stage of idea. As mentioned previously, members of the case university (leadership, staff and students) generally have a positive attitude about entrepreneurship. However, all the bottlenecks mentioned above are making it difficult for the idea to transition in to belief. Consequently, entrepreneurial belief is not spreading across the institution. And without this belief, entrepreneurialism will not be embedded in to the day to day workings of the university as a culture.

Chapter Six: Summary, Conclusion, Implications

6.1 Summary and Conclusion

The once relatively stable higher education landscape is dramatically transforming. Among other things, HEIs of the knowledge age are confronted with an ever increasing and diverse student body which needs training and retraining in a continuous basis (Clark, 1998). At the same time, there is an increasing demand for more accountability and improved quality. Ironically, such expectations are mounting in the face of declining public funding (Cowan, 2013). Amidst such developments the entrepreneurial university model has emerged as mechanism of maintaining balance with the increasingly shifting HE environment (Clark, 1998).

Despite the clear implications of an entrepreneurial university model to developing countries, the review of the relevant literature revealed that most of the empirical research is undertaken in the context of Europe and North America. Even in the case of the theoretical research, the stories more often than not reflect the realities of developed countries. Against this background, the study explored the state of entrepreneurialism in a public university in Ethiopia.

To this end the study was guided with the following research questions:

Main question

- How do internal and external stakeholders view the dynamics of entrepreneurialism at Addis Ababa University (AAU)?

Specific questions

- What is the status of the five entrepreneurial elements identified by Clark (1998) at AAU?
- How is the interrelationship of the five entrepreneurial elements?

The research used Clark's seminal work on entrepreneurial university (Clark, 1998) as main analytical tool. As such, the five entrepreneurial elements identified by Clark (1998), and served as a main theme of investigation.

What is the status of the five entrepreneurial elements identified by Clark (1998) at AAU?

The strengthened steering core

The study revealed that both the substantive (strategic priorities, curriculum design and staff and student selection) and procedural autonomy (i.e, budgeting) of the university were highly constrained by the interference of the ministry of education, which controls the university through the board. Similarly, managerial capacity was found to be low as appointments to various positions in central administration are made partly based on political affiliation and

personal ties. The weak nature of the steering capacity is also manifested, in the long and excessive procedures, overlapping duties, lack of proper financial management systems, lack of policy and guidelines (for some activities) that prevail in the university.

In contrast to the autonomy and managerial capacity entrepreneurial will of leadership was found to be moderate. On the positive side, the university has recognized the desirability of entrepreneurial transformation and has undergone internal reorganization that led to the opening of various offices that could facilitate entrepreneurial practices. Moreover, the steering core has formulated a strategy that promotes entrepreneurialism (i.e., thematic research and adaptive problem solving research). However, the new offices suffer from lack of dedicated budget and well elaborated guideline to successfully realize the devised strategy.

The stimulated academic heartland

The result of the study showed that the stimulation of academic staff and students to embrace the new entrepreneurial values within the university setting is moderate. Generally stated, both staff and students have a positive attitude towards entrepreneurship. Moreover, the staff is in the process of developing a culture of cross disciplinary collaboration as a result of the institution's introduction of '*thematic research*' (which is multidisciplinary in its very nature) and '*adaptive problem solving research*' (which is aimed at specific problems of the society).

On the other hand, a number of prohibitive factors for entrepreneurial behavior were evident. More specifically, students mentioned curriculum related problems (theory-oriented teaching), internship related problems (selection, supervision and follow up), lack of financial and technical support; ill-equipped workshop, and bureaucratic procedures. Whereas from the side of the academic staff, low compensation, excessive procedures, lack of space for bottom up initiative, low technical support, low financial support, and lack of incentive to engage in entrepreneurial practices were mentioned.

The expanded development periphery

In this study, the development periphery was evaluated using two major dimensions: its contribution to knowledge production within the institution and its role as a link to the outside world.

Accordingly, the performance of the development periphery was found to be weak. In that the academic development periphery units (i.e., research institutes) appeared to be loosely coupled with each other and with other departmental units within the institution. Similarly, the administrative development periphery units (i.e., knowledge and technology transfer, community service) were reported to be ineffective.

Secondly, in terms of linking the university with key external stakeholders, the performance of the development periphery was found to be mixed. On the up side, the development periphery

was contributing to the relatively strong collaboration of the university with international partners and various federal government agencies. On the other hand, the collaboration of the university with the community, industry and city administration was found to be weak.

The relationship between the university and city administration is mainly constrained by the unavailability of budget, lack of awareness and students outward mobility. While, the university-industry linkage is confounded by cultural clash, infant industry, underdeveloped collaboration culture, protectionism, and lack of awareness. Lastly, with respect to community service, lack of dedicated budget, lack of well elaborated guideline, overlapping tasks, conceptual ambiguity, and lack of proper documentation were indentified.

The diversified funding base

With respect to diversification of funding, it was found that the university is implementing a wide range of revenue generating activities. The most significant portion of the external fund comes from what the university frames as '*collaborative research projects*'. These are grants secured from national and (mainly) international partners. Currently, there are a total of 78 active collaborative research projects, with an estimated total grant value of 650 million ETB (AAU, 2016a). In addition, the university has established a business enterprise which is engaged in a wide range of revenue generation activities including Printing House, Book Center, Wood and Metal Workshop, Restaurants, and Agro Industry (i.e., Meat, Dairy, poultry) (AAUBE, n.d., P.1). Although insignificant compared to the external fund, the university collects tuition fee from some of its students (i.e., post graduate, doctoral , extension , distance and continuing education , summer in service and international students) (AAU, n.d.). Additionally, the university uses its test center, workshop, training center and teaching hospitals to diversify its income.

That said however, a number of weaknesses were identified. Firstly, the university does not have a well consolidated financial management system. As such the amount of money raised from these various sources is not precisely known. Similarly, how the diversified money is utilized is not clearly known.

Moreover, despite some of the interviewees (leaders, academic staff and students) mentioning lack of finance as a major challenge, the university returns a significant proportion of its annual budget as 'excess' money at the end of every fiscal year. Lastly, as mentioned earlier, the money raised from the industry and city administration is very low.

The integrated entrepreneurial culture

Overall, entrepreneurial culture at the case university was found to be at an early stage of development.

In that the risk taking culture at the case University appears to be low, as the organization does not have any financial pool (other than the amount allocated for research) to support innovative ideas of staff and students that may have a certain risk attached to them. Moreover, the fact that the university allocates less than 10% of its annual budget to research indicates low risk taking propensity. Additionally, the way the research budget is distributed could be considered as another indicator of risk-averse behavior (i.e., the research budget is almost evenly divided across accepted proposals, with a cap of 100,000 and 500,000 for problem solving and thematic research respectively, which denies innovative ideas that may cost more than the research cap any financial support).

Furthermore, resistance to new ideas was reported from both sides (leaders and academic staff). In that, the leaders of the university considered the academic staff as ‘unwilling to embrace new and innovative ideas of management’. The academics on their defense blamed the firmly top-down approach followed by leadership that is denying them the opportunity to critically evaluate the proposed ideas. In a similar fashion, the academic staff framed leadership to be resistant to change. In that the majority of the interviewees indicated as to the lack of ‘real’ space for bottom up initiatives at the case university.

On the other hand, when it comes to the culture of collaboration amongst academic staff, encouraging result was observed. As mentioned earlier, both the culture of internal cross-disciplinary collaboration and collaboration with external stakeholders is developing at the university. However, the collaboration between staff and students appears to be low, although it varied across disciplines and educational level.

Lastly and not surprisingly, students exhibited a very low enterprising behavior, while the staff was more enterprising outside the university setting. Understandably, the impediments inside the institution mentioned earlier such as, long bureaucratic procedures, lack of space for bottom up initiative, low technical & financial support, and lack of incentive are constraining the staff and students from demonstrating enterprising behavior.

Interestingly enough, the academic staff showed a strong enterprising culture outside the university setting. In that staff appears to be actively engaged in a wide range of personal income diversification strategy but it largely occurs outside the university setting due to the inhibiting factors mentioned above.

In a nut shell, all the entrepreneurial elements appear to be weak at the case university (AAU), with the exception of the diversified funding base.

The interrelationship of the five entrepreneurial elements at AAU

The five entrepreneurial elements are assumed to exist in a mutually reinforcing relationship. That is, in addition to directly affecting each other, some of them also mediate the relationship between any two of the elements (see chapter 3). This is precisely why the dynamics of their interaction is pivotal for successful institutional transformation.

When it comes to the dynamics of the five entrepreneurial elements in the case university, they were generally found to be loosely coupled with each other (see table 11). As can be seen in the grid below (Table 10), of the ten possible one-to-one points of interactions that can be formed amongst the five entrepreneurial elements, the majority of them are weakly coupled.

To start with, it can be said that there is a weak bound between leadership and the academic heartland. As mentioned earlier, the university follows a top-down approach and the space for bottom up initiatives is very much limited, as a result the academic staff is reluctant to embrace not only the reform ideas of management but also to suggest their own innovative ideas. This is notwithstanding, the positive attitude of both staff and students towards entrepreneurship in general.

Secondly, the relationship between the steering core and the development periphery was also found to be weak. Although, various offices were opened to facilitate internal knowledge production and external linkage, they are deprived of a dedicated budget and elaborated guideline to successfully carryout their task. This in turn is making it difficult for the development periphery to legitimize their existence alongside disciplinary units within the institution. As such the tie between academic heartland and the development periphery is also weak.

Table 10, the status of each entrepreneurial element and their interrelationship

Entrepreneurial Elements	Steering core	Academic heartland	Development periphery	Diversification of funding	Integrated culture
Steering core	NA				
Academic heartland	Weak	NA			
Development periphery	Weak	Weak	NA		
Diversification of funding	Moderate	Moderate	Weak	NA	
Integrated culture	Moderate	Moderate	Weak	Weak	NA

Fourth, when it comes to the relationship between the steering core and diversification of finance, it was found to be moderate. In that, leadership has shown its intent to diversify its funding base by implementing a range of diversification strategies including the establishment of a business enterprise. On the other hand, the existence of long and bureaucratic procedures and lower remuneration within the institution is preventing the academic staff from bringing in external projects.

Fifth, the contribution of leadership in fostering entrepreneurial culture can be considered moderate as there are some positives and negatives. On the plus side, through thematic and problem solving research, leadership is promoting mode 2 type researches and as a result a culture of collaborative, practice-oriented research is emerging in the university. On the other hand, the lack of technical and financial support to nurture innovative ideas of staff and students coupled with the existence of excessive procedures are discouraging staff and students from engaging in entrepreneurial practices.

Similarly, the contribution of the academic staff to diversification of funding can be considered as moderate. On the positive note, the academic staff is contributing to diversification of funding by securing external grants from national and international partners. On the other hand the staff still prefers to undertake projects externally rather than bringing it through the institution.

Eighth, the contribution of the development periphery to the diversification of funding can generally be considered weak. For the obvious reason that the offices of the development periphery both at the top level (central administration) and lower level (college and institute level) do not have a dedicated budget to support entrepreneurial activities of staff and students. Moreover, the absence of well elaborated guideline is another major impediment.

Ninth, as a direct consequence, of the lack of financial autonomy as well as guideline mentioned above the administrative development periphery units (such as knowledge and technology transfer offices) are not sufficiently contributing to the creation of integrated entrepreneurial culture. Similarly, the academic development periphery units (i.e., research centers) appear to be detached from each other and the rest of academic departments within the university.

Lastly, it can be said that the diversification of funding base is not aiding the development of integrated entrepreneurial culture, as the university is returning a significant proportion of the fund to the ministry at the end of each fiscal year rather than using it to support innovative ideas of its staff and students.

In a nutshell, the aforementioned loose couplings as well as the impediments identified in relation to each element are inhibiting entrepreneurial behavior at the case university.

6.2 Implication for practice

Firstly, before any suggestion is forwarded, it is essential to acknowledge the complexity associated with bringing about change in a university setting. Indeed, Universities are the most resilient of social institutions where diverse political, professional, cultural, and personal values are found in a constant state of tension and cooperation. As such any espoused change should take in to account the contextual realities of the university.

That being said, the study showed a number of impediments in the case university that require immediate attention. At the same time, the study also revealed a number of strong points that the

university could build up on. The main question is therefore of how to capitalize on the positive sides while eradicating the impediments.

The first and most fundamental step is fully understanding, what the entrepreneurial transformation entails with all its requirements. This understanding lays the foundation for creating the enabling environment. As Clark (1998), argues a simple opening of offices here and there would not do the trick. Entrepreneurial university transformation is a cooperative endeavor; as such it requires the full involvement and support of staff and students. Simply put, staff and students lie at the heart of entrepreneurial transformation. And this is precisely, what appears to be missing at the case university.

In that, although, the university established a number of boundary spanning units and incorporated entrepreneurialism in to its core value, it has not clearly recognized the role of staff and especially students in the process.

In line with that, firstly, ‘real’ space needs to be created for both staff and students. The word real should be emphasized, as the university currently “involves” both staff and students in various committees formed around the central administration. But their impact in influencing decisions is restricted. Secondly, a well organized technical support can be provided to enhance the entrepreneurial competence of staff and students. Third, a thoroughly thought out incentive package for staff and students may help promote enterprising behavior within the university. This could be achieved by incorporating entrepreneurial criteria in the tenure track system of the university. While in the case of students such criterion could be embedded in course evaluations.

Fourth, allocating a financial pool to support innovative ideas of staff and students can also be considered. This could simply be achieved by using the money the university returns as ‘excess’ at the end of every fiscal year.

Fifth, the institution should develop intellectual property policy in order to capitalize on the technological innovation of its students and staff. Sixth, the long and bureaucratic procedures which are hampering entrepreneurial behavior within the institution should be broken down and replaced with what Clark frames bureaucracy of change (i.e., “*the substantial addition of non-faculty professionals whose tasks involve promoting change*”) (Clark, 2004, p.74).

In close connection to the point made above, the overlap and conceptual confusion surrounding some of the development periphery offices (i.e., between community service and industry linkage & technology transfer) should be resolved and ways in which they can complement each other should be envisaged. Moreover, financial autonomy with accountability should be given to the development periphery units. This would allow them to provide real support to the staff and students of the university thereby enhancing their credibility and legitimacy. In addition to the aforementioned remarks the institution the university needs to develop a well consolidated financial management system and most importantly use the money at its disposal to nurture more entrepreneurial activities and enhance institutional capacity.

6.3 Future research

This study mainly focused on the internal dynamics of entrepreneurialism in a senior public university. It would be interesting to analyze the dynamics in a private and junior HEI as they have a contrasting reality. As Clark (1998) argues senior universities with stable financial stream might not feel the same level of urgency as the new ones whose survival is in greater doubt. The same can be argued for private HEIs whose survival depends on their ability to generate income.

Secondly, although substantial insight could be gained from Clark's illustration of entrepreneurial elements and their interrelationships, they are loosely defined. Hence, a study that further refines and elaborates each element is beneficial to the existing body of knowledge.

Thirdly, evaluating the link between national innovation policy and entrepreneurial university model is an interesting line of enquiry. Similarly, the link between the level of educational development (elite, mass, universal) and entrepreneurial university is worthy of investigation.

6.4 Limitations of the study

Firstly, since the study focused only public university in Ethiopia, the result could not be generalized to the country as a whole. As mentioned above, especially the context of junior and private institutions in Ethiopia is markedly different.

Secondly, although attempt was made to improve the diversity of the respondents by incorporating internal and external stakeholders; different disciplines (institute of technology and college of education), and different levels (Vice presidents, directors, deans, department heads, academic staff and students) even then, the representativeness of the finding could be improved with more respondents.

Lastly, despite the attempt made to reduce the researcher's bias by implementing a wide range of techniques (member check, peer-debriefing, thick descriptions), the researchers background (business related study) and familiarity with the case university (both as a student and as an instructor) might have influenced some of the decisions.

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Annex

Sample interview Questions

1. Does the university has a formal strategy to foster entrepreneurship, if yes (question 2), otherwise question, 3
2. What does the strategy entail (in terms of Goal, approach, structure, resource allocation,)
3. Does the structure of the university support staff and student entrepreneurship e.g is there a specific unit for supporting entrepreneurial initiatives e.g. research center, technology transfer offices, entrepreneurship center, business incubators, if yes, question 4
4. How effective is the development periphery in terms of, firstly, promoting cross/multi disciplinary collaboration internally (between schools and departments) and secondly, regional engagements?
5. How effective is the development periphery in diversifying the funding source of the university
6. Is there any clear entrepreneurial path way for aspiring staff members and students
7. Does the university allocate sufficient resources to foster staff and student entrepreneurship
8. Is there any motivation scheme or incentive system in place to foster staff and student entrepreneurship , if yes how does it work
9. How do you evaluate the motivation of the staff and students to take part in entrepreneurial initiatives? Does the academic community consider entrepreneurship as an important value of the institution?
10. Do you (team of top level management) have the autonomy to design and implement new and innovative programs, processes or structures or is there any interference from the ministry/state while trying to implement new and innovative initiatives
11. In your opinion What are the major challenges and opportunities of making the university more entrepreneurial
12. What results have been achieved so far as a result of the existing initiatives, (in terms of graduate and staff entrepreneurship, i.e., in terms of start ups, spinoffs, licenses or patents)
13. Lastly, please share, if you have any other idea regarding university entrepreneurship?