

The Entrepreneurial University and Its Influence on the Business Ecosystem

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Abstract: Like the ideological evolutions that have long marked the history of scientific research, it goes without saying that the university, the center of all academic progress, does not fail to illustrate, in its turn, a scope in the missions it seeks to fulfill. Faced with this reality, the concept of university entrepreneurship has been expanded to include student entrepreneurship, now developed in the embryonic phase within Cadi Ayyad University. The purpose of this research was to discover the involvement of Cadi Ayyad University in supporting and promoting the entrepreneurship of its students as well as its correspondence with the characteristics of an entrepreneurial university. Through this research, we presented a literature review centered on the concepts of entrepreneurial university and responsible innovation. We sought to explore within the framework of an exclusive qualitative study the detailed portrait of the entrepreneurial approach through innovation specific to the context of the University Cadi Ayyad in Morocco, then to apprehend the willingness to participate in the entrepreneurial ground among students. The results of this research include the introduction to responsible innovation among young researchers, the perception of the concepts «entrepreneurship» and «innovation» in constant coalition, and the empirical participation of the interviewees' entrepreneurship projects in the regional ecosystem. This study of entrepreneurship and responsible innovation revealed that few respondents have this in mind. In addition, this research aimed at a first apprehension of the model of entrepreneurial university and responsible innovation in a context little studied in this regard.

Keywords: Entrepreneurship, Entrepreneurial University, Triple Helix, Business Ecosystem, Responsible Innovation

1. Introduction

The university's transition from a research vocation to a vocation of entrepreneurship is at the heart of our analysis. This subversive shift has allowed the use and exploitation of scientific research outside lethargic laboratories, to the point of establishing endogenous and exogenous relationships with the corporate world [27].

The beginning of this change dates back to the end of the 19th century, when the American context, suffering from a lack of research funding, led to the emergence of a bottom-up approach, in contrast to the European top-down. It was not until the 1980s that the entrepreneurial university model became widespread [64]. At a time when the context was evolving with the competition brought about by globalization, the State's withdrawal from the scientific modules [57] and the transfer of knowledge from competitive innovations. The

direction of research, which was progressing in a stoic sphere, became supported by advisory bodies, serving the public authorities aware of the importance of research in solving society's problems. The industry is thirsting not for inert academic knowledge, but for the application of product knowledge [33]. A new form of collaboration arises and sets up new challenges of interdependencies between science and industry, where technology becomes a major tool to accompany this evolution [14]. But the greatest phase of change that the university has experienced is probably the increase in students in higher education from nearly 500,000 in the early 1900s to 250 million in 2020 [74]. Thus, society becomes based on academic knowledge, an innovative engine of economic wealth [48]. A three-dimensional link between public authorities, the university and the economy take place. The hope for a prosperous economy no longer resides in the proliferation of multinational companies, but

rather in the very heart of companies in direct communication with universities or research institutions.

Today, entrepreneurial universities have become a compass for evaluating strategic contributions to the overall benefits of the economic environment [34-69]. Therefore, the adoption of entrepreneurship is seen as an extension of the research dimension, from organizational development to regional economic development, until it becomes a social development strategy. The academic enterprise or university enterprise is emerging from its ivory tower towards new openings of innovation, in the image of the first innovation projects that made the success of Silicon Valley for example, and whose origin dates back to Stanford University. Therefore, innovation is an outcome and an ongoing scientific research process to meet the needs of the industrial community. The university joins the firm within a business and innovation ecosystem, in line with communities, public bodies, training centers to create a synergy of efforts and knowledge-sharing with the aim of optimizing the management of joint innovation. However, innovation is currently considered to be responsible, taking a sustainable development perspective that inculcates values in response to "present needs without compromising the ability of future generations to meet their own needs" [15]. The dilemma is that established sustainability extends over the long term and responsible innovation is the company's quick fix. However, responsible innovation is not limited to the scope of the environment, but also includes how it is implemented and the involvement of internal and external stakeholders.

The Moroccan context draws a web of reluctance to the real act of entrepreneurship [7]. While 74% of graduate students express an entrepreneurial intention [44], this intention remains conditioned by the presence of a favorable environment (university, friends, family, funding agencies, etc.), source of vulnerability of the current entrepreneurial structure. The lack of financing adapted to the entrepreneurial form in its beginnings is one of the most blocking obstacles to the economic progress of young people in Morocco [8]. Indeed, the risk-taking and organizational structure of the start-up requires a form of financial support that is absent from the banking partner scene, requiring guarantees that the young entrepreneur is unable to offer. The Moroccan reality also expresses the dichotomy between the skills of students and the qualifications required by young entrepreneurs. "There is a mismatch between the professional skills required by the entrepreneur and those offered by schools and universities" [25].

One question then seems obvious: What is the influence of higher education institutions in promoting a responsible business and innovation ecosystem among young entrepreneurs? For this purpose, we analyzed the literature review that approached topics relevant to the entrepreneurial university as well as the integration of responsible innovation into the entrepreneurship training process. We then proceeded to present the methodology using a qualitative approach, providing an exclusive overview of the results analyzed in real time. A discussion of the research perspectives offered by the

empirical findings completes our study.

2. Conceptual Framework

2.1. *The Entrepreneurial University*

The university integrated the mission of research in addition to its initial mission of teaching, feeding a first university revolution during the late 19th century [72-75]. Research thus sets up the university with a status of knowledge producer, hence the second academic revolution that adds the entrepreneurial aspect of this knowledge enterprise. The mission of the new university is to focus on its contribution to social development and economic growth [67]. Universities must respond to the needs of the knowledge economy through training so that students possess skills that are not only local but also globally competitive [63]. Entrepreneurial universities must also become entrepreneurial organizations, their members must become potential entrepreneurs and their interaction with the environment must follow the entrepreneurial model [62]. Consequently, the achievements of entrepreneurial universities are closely linked to their mission: teaching, research and entrepreneurial activities. This evolution of the university's expanded missions of teaching to research, leading to the entrepreneurial lens transcends the paragon of the university but also of a research society. The gap between these two actors is narrowing, since research is no longer confined in theory, but is taking shape on the ground, in the image of national innovations.

Nowadays, entrepreneurial universities participate in partnerships, networks and business activities with public and private enterprises and governments to seek cooperation and interaction with the aim of linking education, research and activities for technological, social and economic development [35]. This is the starting point for understanding the role of entrepreneurial universities and discovering the importance of 'good practices', which can help improve collaboration between stakeholders and universities. An entrepreneurial university can be defined as a higher education institution, which protects knowledge, transfer and commercialization of innovative business plans between universities, stakeholders, governments and businesses with economic, financial and organizational standards [43].

Universities are perhaps the most commonly found participants/institutions in the entrepreneurial ecosystem after the entrepreneur himself, and much of the research focuses on universities as the center of this ecosystem [12-60-65]. More importantly, universities are also active in the entrepreneurial ecosystem, although they are not considered central [51]. The most useful type of university is that of a university, whose role is to define the 'node' of an institution, and its influence is determined by the specific regional innovation system in which it is integrated. In many cases, the most important function of universities is to provide highly qualified and professional talent [13]. Graduate students are the leading entrepreneurs creating and

developing spin-off companies [40].

However, the company's position as an actor influencing its environment, a stakeholder in continuous interaction, belonging to a living innovation ecosystem, should not be overlooked [11-20]. Beyond that, we are talking about dynamism of correlated relationships that the university systematically maintains with the various socio-economic actors, a commitment that it manifests through consultancy activities, student training, participation in economic development events and collaborative projects with industry [36]. The focal actor of these activities is undoubtedly the student who plays a considerable role in entrepreneurial conduct within universities [68]. Whether it is business creation or spin-offs, the student exploits the knowledge received by creating an entrepreneurial product [39]. Entrepreneurial culture, then becomes embedded in teaching and coaching entrepreneurial projects [50]. Each university adapts to the local business climate which gives it a distinctive identity, ensuring the resolution of regional issues which, as the interactions are maintained and the projects carried out, can become a hub of knowledge and innovation.

So far, the relevant model has been the triple helix [28]. A relationship between the state, the university and the market, where university research is at the center of this model. While the state-industry dyad regulated the business climate through institutional measures or government decisions, this two-dimensional process stagnated at the level of innovation production. The nodal role of this triple helix also highlights the democratization of entrepreneurial leadership in the formation of a skilled workforce but also of an action plan adapted to support the start-up during all its phases of development.

2.2. Responsible Innovation

Responsible research and innovation (RRI) has become increasingly important in policy debates, particularly in Europe. The concept of Responsible Research and Innovation (RRI) can be rooted in the discourse on the ethics of research in emerging technologies and nanotechnology or geoscience, engineering, mainly within the framework of European research and innovation policies [54]. Innovation is the process of creating value and realizing products, services, processes or forms of organization to meet the expectations of all stakeholders in the business ecosystem. But innovation refers primarily to "change", "transformation", and also "evolution". It stems from the use of knowledge and instills entrepreneurship through scientific research. Therefore, innovative concepts are essential to achieve economically (serving the economy), social (serving society) and political (serving public authorities) objectives. Innovation is classified according to a classical typology, grouping radical (incremental), organizational, modular (partial) or architectural innovation (the art of incorporating new components). This first distinction is not final, and remains dependent on technological developments relating to the various phases of evolution. A ranking of responsible innovation, including technological, non-technological,

mixed and systematic areas (including product, process, organizational and managerial innovations) should be presented in the same vein.

However, we must first distinguish responsible innovation from corporate social responsibility. Responsible innovation requires the reasonable impact of technology and its sustainable thinking on environmental development to limit the disastrous consequences, while corporate social responsibility questions the role of business in society and its symbolic significance in social services and well-being [10]. The social responsibility of the company, therefore concerns its economic profitability in the first place, its respect for the environment in the second place and finally, its integration of social equity in its practices of distribution of human and natural resources. In the same vein, social innovation and responsible innovation intersect without ever getting confused, and for good reason. Indeed, social innovation responds to environmental problems on the one hand, while responsible innovation has a wider scope, including both the consequences and the stakeholders involved in this process on the other. The innovation process is one of the key determinants of responsible innovation, defining the participation of actors to innovate by considering all the consequences of a possible innovation [55]. Responsible innovation is determined by societal and environmental dimensions [42]. Sustainability is a common feature of the two definitions presented. Innovation therefore constantly assumes a certain responsibility when it controls the uncertainty and inherent risk that characterizes it. Thus, to implement responsible innovation is to question its impact on the regional environment and its usefulness in the face of personal needs. What follows is the expectation of the direct impact of innovation on users, which goes far beyond short-term profitability. Although innovation has no normative direction, some companies have incorporated innovation into their business strategies or models to reduce the negative impact of their products or services on people and/or businesses. In the later stages of the innovation process, public credibility, legitimacy and confidence in the company and its innovative products or services have also been improved. All these elements make innovative companies more competitive. If we accept that the concept of responsible innovation does not apply to companies, but that once they have understood the benefits of their business strategy, they are ready to implement the elements of responsible innovation. Then the implementation of promising work will be based on what the company already has alone or as an industry, providing information and tools to explore other aspects of responsible innovation in a specific context. As the strategic and operational aspects are mentioned, it remains essential to specify the concrete footprint of these two points on the performance of the company that adopts responsible innovation. Therefore, the adoption of responsible practices can lead to better performance and create new economic opportunities that have proven successful [55].

3. Empirical Analysis

3.1. Methodology

The qualitative method was the subject of this study, in response to the exploratory nature of the research question. This choice is therefore determined by the purpose of describing a restricted social situation (descriptive research) or exploratory research that explores certain issues [58]. This method makes it possible to become familiar with individuals, to leave a free voice to their emotions, feelings, experiences and interactions with the research subject.

The present case is the model of the entrepreneurial university, in embryonic phase in Morocco, little studied and closely spread among Moroccan universities. The case study is therefore highly appreciated for its exploratory contributions, which enable a better understanding of the phenomenon, events and actors and their relationship with the subject under study [77]. It is the study of dynamics in a unique and particular context [22].

The sample consists of a diaspora of students who went through a university course at Cadi Ayyad University. On the basis of a well-defined literature review, we were able to develop a semi-structured interview guide to synthesize all topics related to the image of entrepreneurs, the role of universities in promoting entrepreneurship, the inclusion of responsible innovation and the participation of innovative and entrepreneurial universities in the business ecosystem.

3.2. Data Collection

This study was carried out through semi-directional interviews administered to students from Cadi Ayyad University, identified through a network of present and former colleagues from the same university.

Interviews were conducted by telephone and face-to-face meetings. All respondents are students in different fields (economics, management, law, etc.) and who maintain entrepreneurship activities as a main or auxiliary activity. We were able to administer 13 interviews to students from the University of Cadi Ayyad, lasting from 45 min to 1h for each interview carried out and counting 11 h 7 min in total.

Although interviews take time to qualitative research, they remain the best way to understand complex topics in real life.

3.3. Data Processing

Content analysis has been mobilized for data processing [4-5-61-66], in three steps: the pre-analysis that will allow us to involve a segmentation of ideas. The use of the material to select a coding (paragraph, sentence and word), with the aim of linking raw words to specific codes, in order to facilitate the interpretation of the results [73] and the final step that will be used to process, interpret manually and infer the results obtained [78].

The following table presents the axes studied and related to the literature review. This step facilitates the analysis of the results according to a well-defined categorization of the processed data.

Table 1. Thematic axes of qualitative research.

Axes administered	Contents
Portrait of the entrepreneur	Higher education courses followed, motivation of choice of entrepreneurial vocation, support of the entourage in this journey, a description of the institutional approaches present in the Moroccan context.
The role of the entrepreneurial university	Role of the Moroccan University in promoting entrepreneurship, participation of the Cadi Ayyad University in this process, the adaptability of university training with the entrepreneurial reality, accompanying measures for future entrepreneurs by the university.
Integrating Responsible Innovation	Definition of responsible innovation, promotion of responsible innovation of the entrepreneurial university, integration of responsible innovation into the academic agenda, perceived contributions of responsible innovation.
The entrepreneurial university and the business ecosystem	Definition of a business ecosystem, role of the entrepreneurial university within a business ecosystem, participation of the university in the improvement of its business ecosystem, results of student entrepreneurship promotion of local economic growth.
Overall assessment	Learnings and acquired skills of the entrepreneurial university path, obstacles encountered, recommended avenues for improvement, points of particular developments of the entrepreneurial university.

4. Analysis of Results

The analysis of the results allows us to report the information collected by the interviewees in order to better understand the process of accompaniment of entrepreneurial universities towards their students, and the integration of responsible innovation into their teaching.

4.1. The Role of the Entrepreneurial University

The university is beginning to teach entrepreneurship, an essential module for training in management and economics. Opinions on the role of the actual presence of the university during the period of entrepreneurial accompaniment indicate

a low presence, described by E1, E3, E4, E9, E11 and E12: "We have seen a number of national initiatives and competitions that can influence entrepreneurship, but on the ground, everything remains limited." The case of Cadi Ayyad University is still at a preliminary stage and to a small degree. There are some differences with the different entities affiliated to the same university in question. For faculties, courses and training are given. But what interests students are a more practical approach and an interaction with the outside world that remains impalpable since theoretical training. E7 and E8 explain: "for example, the ENCG (National School of Business and Management) presents a greater entrepreneurial disposition for the preparation and realization of projects given during the subjects of management, marketing and

even finance. This helps us form ideas and encourages us to move to reality and make things happen.” This incentive is all the more present through competitions in collaboration with other organizations, without also neglecting the role of university clubs that encourage students to engage in entrepreneurship. It remains clear that the training received implicitly feeds the skills of future entrepreneurs. E3, E5, E6 and E7 argue that “inventory management, calculation of purchase cost, profit management and pricing are all beneficial lessons from the university curriculum”. Many point to coaching in council by their professors, the main reasons for their projects today: “The training is still indirect, but the most important thing is that the supervision of the teachers remains essential, an accompaniment to answer the many questions and worries of the confused and frightened young students”. In addition to university training, there are coaching offices, associations and private incubators that spread their experiences to beginning entrepreneurs. E3, E5 and E7 continue: “There are lots of programs, but it’s limited. To integrate them, your idea must be solid to compete with others. There are also small incubator firms for startups that are starting to grow.” All amplify the role of personal development through training on new market practices. These actions remain limited for theoretical training, but not to encourage people to think entrepreneurship. E2 says: “These measures are still insufficient, because we don’t have many hubs of innovation and entrepreneurship in Morocco, and the hubs that exist don’t give access to everyone”.

This part explains the existing role of the entrepreneurial university in the theoretical and entrepreneurial education of students. However, an empirical coaching limit slows down entrepreneurship among students with ideas.

4.2. Integrating Responsible Innovation

Referring to the different interviewees, responsible innovation is defined according to its purpose, the stakeholders involved and the process followed.

First, E6 says, “Through innovation, we seek to provide aid rather than destruction”. Responsible innovation focuses on corporate decision-making responsibility and its impact on the surrounding biological, social and economic environment. It is about improving social conditions, improving living conditions and quality of life. E1 and E4 add that “innovation with responsibility means creating innovative projects that have added value to society as a whole.” It is also a question of knowing the position of the company in this regard, which tries to respond rather to a social, societal or environmental problem. Today, the goal of a startup is not really just to succeed in a business, but to play a positive role in society,” according to E2, E4 and E7. Interviewees find it difficult to place their projects in a responsible vision of the innovation being deployed, requiring better training on the subject and support tailored to the project in question. They go on to say, “We try our best, it’s not always easy”. E1, E2 and E9 were the only respondents to adopt responsible innovation primarily in promoting local biodegradable products. The university’s

involvement in responsible innovation is mainly focused on awareness-raising, through events and symposia as well as collaborations with professional organizations allowing future entrepreneurs to move towards this type of innovation. This reality is not very present in the Cadi Ayyad network, according to the interviews conducted. According to E1, E2, and E8, “it’s up to the university to create more innovation hubs and therefore it’s up to this hub to create segments or incubators that demand responsible innovation.” Thus, universities remain key players in the integration of responsible innovation, and innovation is always the subject of teaching modules rather than pragmatic actions. In this case, the operational characteristics are still insignificant. E3, E5, E8, E9, E11 and E12 add: «responsible innovation is not yet seen as a necessity».

The adoption of responsible innovation is, above all, an awareness shared by all respondents adopting responsible innovation. Second, it is an increase in awareness as introduced by E3 and E6: “If the project and the idea are appreciated by the consumer community, I think it increases the awareness of my project and its profitability while encouraging me to always think of “responsibility” before “profit”. Moreover, responsible innovation is approved as an essential feature in any business plan as expressed in E2, E4 and E7: «today, many incubators and investors insist that the idea responds to a societal or environmental problem».

4.3. Entrepreneurial University and the Business Ecosystem

Universities are integral participants in the business ecosystem. However, although scientific terms are used implicitly, the concept of business ecosystem is rarely used in local terms. It is therefore relevant to review the definition given during interviews, which are consistent with the relational character between the actors of a professional environment. This is the link that the company weaves with its entourage, and which have a reciprocal influence in a given economic framework. Five of our respondents admitted that they had never heard of the term, and therefore could not give it a definition. The rest of the respondents define the concept as “a community of actors from different fields of activity with the same strategic vision”. It is a working network, a community of actors in connectivity (competitors or not) and ensures an exchange between stakeholders (of which the company is a part) with a beneficial goal for the whole network. The university is also considered vital within a business ecosystem, described as “the foundation of innovations” by E3, E5 and E8. On a real level, this role remains very negligible and not adapted to the different profiles of entrepreneurs (in terms of age and training), an essential factor that discourages many students to invest more in this adventure. E4, E8 and E9 add: «it is up to the university through hubs to provide and encourage or rather develop and mentor this kind of profile (entrepreneur)».

The Cadi Ayyad University contributes to improving its business ecosystem primarily through “partnerships with other institutions and businesses, but it is still not widespread,” according to respondents. By encouraging

young students to create their own projects and have an income, the university tries to develop a triple combination of training, guidance and feedback. A test of the skills taught is therefore called into question. This promotion of entrepreneurship can only be beneficial and produce a better quality of future entrepreneurs.

As a result, entrepreneurship has a gradual but slow effect. It focuses on the essential role of the entrepreneurial university in its business ecosystem. A role that exists, but which is due to slow execution and unsuitability with the different profiles of existing entrepreneurs and which often do not find a suitable accompaniment from the university sphere.

4.4. Overall Assessment

The assessment of the information collected is intended to draw up a list of skills and learnings which the university course confers and which includes, on the one hand, modules taught as confirmed by the interviewees: "My academic background has allowed me to have knowledge in different managerial aspects essential to any phase of entrepreneurship". On the other hand, all respondents stated the importance of the soft-skills they have developed in many ways throughout their studies, which have been more advantageous to them than their theoretical learning. E5, E6, E7 and E8 affirm: "It is a journey that has shown me the importance of entrepreneurial practices, through perseverance, the setting of objectives, the taking of calculated risks. Above all, we learn to be confident, to optimize time management and to become more responsible." The first obstacles in this direction are the lack of financial support, the difficulty of administrative procedures and the difficulty of creating a balance between studies and the entrepreneurial project. The Covid-19 crisis has certainly impacted many of our respondents, concerning mainly orders and sales. But the shared point is above all the challenges that come with the choice of entrepreneurship, conclude E2, E9 and E11: «it is a matter of persevering in the face of the majority mentality that prefers the comfort zone represented by the wage earner».

In this regard, several avenues for improvement are advocated during these interviews, which begin with an inculcation of the entrepreneurial spirit from an early age, through good communication, a key vector in the economic field. E4 and E7 say, "Sometimes even with the perfect idea, if you can't communicate it, you are automatically stigmatized and marginalized." The criterion of an appropriate accompaniment is highlighted by all our respondents who suffer from a lack of accompaniment adapted to the needs of young beginners in professional life. A project idea is the only wealth available to a student who cannot claim to have guarantees or capital to mobilize. Finally, the age criterion is on the agenda, according to E1, E9, E10 and E12 which add that "we must take into account that there are less young people full of enthusiasm but who find themselves lost and unaccompanied in the absence of their age".

Our respondents express the wish to add more specialized modules and encourage students to do internships each year to get closer to businesses. An opening on the development of the "student-entrepreneur" concept is highlighted more than ever, thanks to the experience of many collaborators in this study. The results of this analysis show that there is a collusion relationship between universities and responsible innovation. Universities should get rid of theoretical methods and focus on more authentic entrepreneurial practices and on personal and continuous learning. Many students still need to be encouraged and motivated to set up their creativity and innovative ideas.

5. Discussion of Results

Research on entrepreneurial universities combined with responsible innovation helps to understand the evolution of Cadi Ayyad University and its responsible methods for positioning students and future entrepreneurs for innovation. This is an approach that is beginning to grow in the local context, as it made its official debut in the 1980s (Schaeffer, 2019).

5.1. University Coaching at the Centre of Successful Entrepreneurial Approaches

The research carried out will determine the university's main place in any accompanying process and will not fail to motivate students to stick to an increasingly attractive entrepreneurial career. If this accompaniment is embodied in a perspective of learning and knowledge transfer, then the experience will lead to an optimization of university profiles, and establishing strategies for developing partnerships with universities and regional economic fields. The present study shows that support is emerging both on the theoretical and professional scales. Whether it is a faculty coaching or potential incubators, students rely heavily on constant support during the entrepreneurial process.

It is also a matter of focusing on a fundamental element in entrepreneurial discourse that is part of the entrepreneurial culture [19]. A set of internal resources closely linked to the historical development of the university is needed to strengthen the development and evaluation of research. Without these resources, the technology and skills transfer structures developed to support partnerships between universities and industrial research have not fostered the development of these partnerships. All interviewees expressed this reality.

5.2. The Participation of the Entrepreneurial University in the Prosperity of the Local Business Ecosystem

The university is not a question of knowledge and technology transfer, nor even of innovation patents. It is an actor at the heart of the local business ecosystem and transcends the rhythm of dynamic interactions between its different actors [11-20]. In this way, academic participation results from the opening of universities to the environment,

defining their economic dynamics [31-56].

The Cadi Ayyad University is gradually opening up to its local environment, notably through the signing of collaborations with incubators, the organization of workshops on entrepreneurship training, seminars dedicated to sharing experiences with experts, entrepreneurs and researchers involved. This openness is a complementary continuation of the initial training offered by the university and aims at a more concrete development corresponding to the changes in the entrepreneurial field. The development of entrepreneurial academic networks strongly corresponds to the diversity of academic participation [56]. The different forms of academic participation have also led to a rethinking of university teaching missions. Today, students play a fundamental role in accelerating university entrepreneurial motivation [68]. Faced with this reality, the concept of university entrepreneurship has been expanded to include student entrepreneurship, now developed in the embryonic phase within Cadi Ayyad University. By guiding and supporting students, universities help build an entrepreneurial ecosystem that adapts to local conditions and fosters the development of an entrepreneurial culture [50].

5.3. Responsible Innovation for Sustainable Economic Growth

The integration of responsible innovation into the entrepreneurial approach of the university shows a shared absence and an alarming delay in the practice of respondents. Innovation is generally closely linked to a company's core business, and different companies operate under different conditions (for example, business models, products and contextual factors such as legal frameworks or industry dynamics). Respondents assume the role of responsible innovation and the weight that any responsible entrepreneurial project carries today. However, this observation is still not widespread among the various stakeholders throughout this process. Responsible innovation also remains absent from the academic syllabus, a problem that has not yet been raised. However, in the view of respondents, innovation is an awareness of the possible consequences of innovative action and not of innovation itself. Innovation brings novelty, not good or evil. Innovation itself cannot be responsible to society or the environment or to ethical compliance. These are the stakeholders who bear responsibility for the resulting actions as evidenced by the interviewees [30].

6. Conclusion

The purpose of this research was to discover the involvement of Cadi Ayyad University in supporting and promoting the entrepreneurship of its students as well as its correspondence with the characteristics of an entrepreneurial university. Subsequently, we sought to understand the concept of responsible innovation, according to the different perceptions of the interviews conducted and which seek to complement the role of sustainable engagement of the

university studied. Through a qualitative study, we explored all the concepts developed in the literature review. It results to be some agreement between conceptual and empirical analysis reflecting the experimental demonstrations of the university as a promoter of entrepreneurship on the one hand, and the integration of responsible practices throughout the innovation process on the other hand.

The results have therefore been quite revealing of a wealth of useful information, which gives an exclusive and up-to-date picture of Cadi Ayyad University according to a constructive return of alumni and current students of the university network. Initially, incentives and support for entrepreneurship are quite recent and limited. The university acts as a knowledge transfer channel to meet local economic needs [43]. However, the university is particularly involved in a network of collaboration and exchange with different actors in the local but also national ecosystem [26], partly through colloquia, contracts with companies, consulting and experience-sharing meetings with former entrepreneurs and experts in the field. Second, the university occupies an important place in its local ecosystem recognized by the local community, training high-quality talent to enrich the entrepreneurial field with rich skills and knowledge [65]. However, the case studied has some delays in direct entrepreneurship education, and instills more at some institutional levels than others. The case of the National School of Business and Management of Marrakech proves to have a complete module dedicated to entrepreneurship, due to the increasing competition, which promotes the development of innovative ideas [40]. In the third and final stage, the interviews revealed that there was no responsible innovation in the academic program. The responsibility for innovation is based on several standards mentioned in the conceptual framework, among which environmental and social sustainability [42] are the most recognized staples by respondents. Indeed, responsible innovation is first of all the most important awareness, then the actions of anticipation chained for the objectives accepted by the company [53]. The realization of the research was based on an increased participation of collaborators who contribute today to the deployment of the entrepreneurial sphere. The success of this study is first attributed to the persistence of the interviewees' participation in the research and their various contributions, which help to clarify the vision of the managed interviews. The difference in age and gender also allows for different returns and demonstrates the evolution of Cadi Ayyad University from its foundation to the present day. We are talking about the progressive academic participation of the same entity.

The limitations of this study were essentially centered around the difficulty of holding an open interview with profiles that met the objectives of this research. The interview question around entrepreneurship and responsible innovation was revealing the few respondents who fit into this perspective. In addition, this research aimed at a first apprehension of the model of entrepreneurial university and responsible innovation in a context little studied in this

regard. It would therefore be appropriate to explore the issue of entrepreneurial culture specific to Cadi Ayyad University, which would serve to further explain the university's evolutionary path and the particularities that distinguish it.

References

- [1] Audretsch, D. B. (2014). From the entrepreneurial university to the university for the entrepreneurial society. *The Journal of Technology Transfer*, 39 (3), 313-321.
- [2] Audretsch, D. B., & Link, A. N. (2017). *Universities and the Entrepreneurial ecosystem*. Cheltenham: Edward Elgar Publishing.
- [3] Autio, E., Kenney, M., Mustar, P., Siegel, D., & Wright, M. (2014). Entrepreneurial innovation: The importance of context. *Research policy*, 43 (7), 1097-1108.
- [4] Bardin, L. (1977). *L'analyse de contenu*. Paris: Presses universitaires de France.
- [5] Bauer, M. W., & Gaskell, G. (2012). *Qualitative researching with text, image and sound*. Londres: Sage.
- [6] Berger-Douce, S. (2015). La performance par l'innovation responsable. *Entreprendre Innover*, (1), 37-44.
- [7] Binkkour, A., & Messaoudi, M. (2013). La communication de la RSE: entre conviction et contraintes-Cas de la PME marocaine. *Communication de la responsabilité sociale des organisations: le défi de la crédibilité*. Québec: Université Laval.
- [8] Boussetta, M., Ezznati, M., & Achour, F. Z. (2013). Entrepreneuriat des jeunes et développement de l'esprit d'entreprise au Maroc: l'expérience de Moukawalati. *Rapport de Recherche du FR-CIEA*, (54/13).
- [9] Boutillier, S., & Alexandre, L. (2019). Éditorial. L'entrepreneuriat scientifique: institutions et innovation. *Marché et organisations*, 1 (1), 11-14.
- [10] Bowen, H. R. (1953). Graduate education in economics. *The American Economic Review*, 43 (4), iv-223.
- [11] Bozeman, B., Rimes, H., & Youtie, J. (2015). The evolving state-of-the-art in technology transfer research: Revisiting the contingent effectiveness model. *Research Policy*, 44 (1), 34-49.
- [12] Bramwell, A., & Wolfe, D. A. (2008). Universities and regional economic development: The entrepreneurial University of Waterloo. *Research Policy*, 37, 1175-1187.
- [13] Bramwell, A., Nelles, J., & Wolfe, D. A. (2008). Knowledge, innovation and institutions: Global and local dimensions of the ICT cluster in Waterloo, Canada. *Regional Studies*, 42, 101-116.
- [14] Brooks, H. (1994). The relationship between science and technology. *Research policy*, 23 (5), 477-486.
- [15] Brundtland, G. H., & Khalid, M. (1988). *Notre avenir à tous*. Montréal: Éditions du Fleuve.
- [16] Brunitz, S. M., O'Shea, R. P., & Allen, T. J. (2008). University Commercialization Strategies in the Development of Regional Bioclusters. *Journal of Product Innovation Management*, 25, 129-142.
- [17] Carayannis, E., & Campbell, D. (2017). Les systèmes d'innovation de la quadruple et de la quintuple hélice. *Innovations*, 3 (3), 173-195.
- [18] Chesbrough, H. (2003). *Open innovation. The new imperative for creating and profiting from technology*. Brighton, Massachusetts: Harvard Business School Press.
- [19] Clark, R. (1998). *Creating Entrepreneurial Universities: Organisational Pathways of Transformation*. Oxford: Pergamon/Elsevier Science.
- [20] Cooke, P. (2005). Regionally asymmetric knowledge capabilities and open innovation: Exploring 'Globalisation 2'—A new model of industry organisation. *Research policy*, 34 (8), 1128-1149.
- [21] Debref, R., Gallaud, D., Temple, L., & Temri, L. (2019). Éditorial. L'innovation responsable, dimension stratégique des organisations. *Innovations*, (2), 5-13.
- [22] Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Review*, 14 (4), 532-550.
- [23] El Cati, N., & El Ouazzani, K. (2019). Le rôle de l'université marocaine dans la promotion de l'entrepreneuriat responsable. *Moroccan Journal of Entrepreneurship, Innovation and Management*, 4 (1), 91-107.
- [24] El Ouazzani, H., Rouggani, K., & Nabil Bouayad, A. (2018). Le Financement des petites et moyennes entreprises: Cas du Maroc. *Revue Economie & Capital*, (14), 5-24.
- [25] El Ouazzani, K. (2018). La dynamique entrepreneuriale au Maroc 2016. *Rapport du Global Entrepreneurship Monitor*. Tanger: Éditions Litograf.
- [26] Etzkowitz, H. (2001). The second academic revolution and the rise of entrepreneurial science. *IEEE Technology and Society Magazine*, 20 (2), 18-29.
- [27] Etzkowitz, H. (2003). Research groups as 'quasi-firms': the invention of the entrepreneurial university. *Research policy*, 32 (1), 109-121.
- [28] Etzkowitz, H., & Leydesdorff, L. (1999). The Future Location of Research and Technology Transfer. *The Journal of Technology Transfer*, 24 (2), 111-123.
- [29] Etzkowitz, H., Webster, A., Gebhardt, C., & Terra, B. R. C. (2000). The future of the university and the university of the future: evolution of ivory tower to entrepreneurial paradigm. *Research Policy*, 29 (1), 313-330.
- [30] Fernandez-Walch, S., & Romon, F. (2010). *Management de l'innovation. De la stratégie aux projets*. Paris: Vuibert.
- [31] Filipetti, A., & Savona, M. (2017). University-industry linkages and academic engagements: individual behaviours and firms' barriers. Introduction to the special section. *The Journal of Technology Transfer*, 1-11.
- [32] Geuna, A., & Nesta, L. (2006). University patenting and its effects on academic research: the emerging European evidence. *Research Policy*, 35, 790-807.
- [33] Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). The new production of knowledge: The dynamics of science and research in contemporary societies. Thousand Oaks, Californie: Sage.

- [34] Grimaldi, R., Kenney, M., Siegel, D. S., & Wright, M. (2011). 30 years after Bayh–Dole: Reassessing academic entrepreneurship. *Research Policy*, 40 (8), 1045-1057.
- [35] Guerrero, M., & Urbano, D. (2012). The development of an entrepreneurial university. *The journal of technology transfer*, 37 (1), 43-74.
- [36] Gulbrandsen, M., & Thune, T. (2017). The effects of non-academic work experience on external interaction and research performance. *The Journal of Technology Transfer*, 42 (4), 795-813.
- [37] Gulbranson, C. A., & Audretsch, D. B. (2008). Proof of concept centers: accelerating the commercialization of university innovation. *The Journal of technology transfer*, 33 (3), 249-258.
- [38] Hayter, C. S. (2016). A trajectory of early-stage spinoff success: the role of knowledge intermediaries within an entrepreneurial university ecosystem. *Small Business Economics*, 47 (3), 633-656.
- [39] Hayter, C. S., Lubynsky, R., & Maroulis, S. (2016). Who is the academic entrepreneur? The role of graduate students in the development of university spinoffs. *Journal of Technology Transfer*.
- [40] Hayter, C. S., Lubynsky, R., & Maroulis, S. (2017). Who is the academic entrepreneur? The role of graduate students in the development of university spinoffs. *The Journal of Technology Transfer*, 42 (6), 1237-1254.
- [41] Hood, C. (1995). The New Public Management in the 1980s: variations on a theme. *Accounting, organizations and society*, 20 (2), 93-109.
- [42] Ingham, M. (2011). *Vers l'innovation responsable: pour une vraie responsabilité sociétale*. Louvain-la-Neuve: De Boeck.
- [43] Kalenyuk, I., & Dyachenko, A. (2016). Entrepreneurial universities in a world educational system. *International Economic Policy*, 25 (2), 59-74.
- [44] Koubaa, S., & Sahib Eddine, A. (2012). L'intention entrepreneuriale des étudiants au Maroc: une analyse PLS de la méthode des équations structurelles. *Actes du 11^{ème}*. Brest: CIFEPM.
- [45] Laufer, R. (1995). Sur ce qu'il y a de nouveau en management public, in D. Desjeux et B. Pequignot (dir.), *Le service public, la voie moderne*, colloque de Cerisy, coll. logiques sociales. Paris: L'Harmattan.
- [46] Lockett, A., & Wright, M. (2005). Resources, Capabilities, Risk Capital and the Creation of University Spin-Out Companies. *Research Policy*, 34, 1043-1057.
- [47] Lockett, A., Wright, M., & Franklin, S. (2003). Technology Transfer and Universities' Spin-Out Strategies. *Small Business Economics*, 20, 185-201.
- [48] Machlup, F. (1962). *The production and distribution of knowledge in the United States*. Princeton: Princeton university press.
- [49] Marcandella, E. (2015). Management responsable de l'innovation - Concept, méthodologie, perspectives, 11^{ème} Congrès International Pluridisciplinaire en 18 Qualité, Sécurité de Fonctionnement et Développement Durable. Nancy: Qualita'2015.
- [50] Matt, M., & Schaeffer, V. (2015). Le soutien à l'entrepreneuriat académique dans le modèle d'université hub. *Innovations*, 3 (3), 13-39.
- [51] Motoyama, Y., & Knowlton, K. (2017). Examining the connections within the startup ecosystem: A case study of St. Louis. *Entrepreneurship Research Journal*, 7 (1). <https://doi.org/10.1515/erj-2016-0011>.
- [52] Organisation de Coopération et de Développement Economiques. (1997). *Manuel d'Oslo: La mesure des activités scientifiques et technologiques* (2^{ème} édition). Paris: OCDE.
- [53] Owen, R. (2012). Des valeurs coopératives à l'innovation responsable. *Projectics / Proyética / Projectique*, 2 (2-3), 13-21.
- [54] Owen, R., Macnaghten, P., & Stilgoe, J. (2012). Responsible research and innovation: From science in society to science for society, with society. *Science and Public Policy*, 39 (6), 751-760.
- [55] Pavie, X. (2012). *Innovation-responsable: stratégie et levier de croissance des organisations*. Paris: Eyrolles.
- [56] Perkmann, M., Tartari, V., McKelvey, M., Autio, E., Broström, A., D'Este, P., & Krabel, S. (2013). Academic engagement and commercialisation: A review of the literature on university-industry relations. *Research policy*, 42 (2), 423-442.
- [57] Pestre, D. (1997). La production des savoirs entre académies et marché-Une relecture historique du livre: «The New Production of Knowledge», édité par M. Gibbons. *Revue d'économie industrielle*, 79 (1), 163-174.
- [58] Poupard, J., Deslauriers, J-P., Groulx, L. H., Laperrière, A., Mayer, R., & Pires, A. (1997). *La recherche qualitative: enjeux épistémologiques et méthodologiques*. Montréal: Gaëtan Morin.
- [59] Raagmaa, G., & Keerberg, A. (2017). Regional higher education institutions in regional leadership and development. *Regional Studies*, 51 (2), 260-272.
- [60] Rice, M. P., Feters, M. L., & Greene, P. G. (2014). University-based entrepreneurship ecosystems: A global study of six educational institutions. *International Journal of Entrepreneurship and Innovation Management*, 18, 481-501.
- [61] Robert, A. D., & Bouillaguet, A. (2007). *L'analyse de contenu*. Paris: Presses Universitaires de France.
- [62] Röpke, J. (1998). *The entrepreneurial university, innovation, academic knowledge creation and regional development in a globalized economy*. Working Paper No. 3, Department of Economics, Philipps-Universität Marburg, Germany.
- [63] Sam, C., & Van der Sijde, P. (2014). Understanding the concept of the entrepreneurial university from the perspective of higher education models. *Higher Education*, 68 (6), 891-908.
- [64] Schaeffer, V. (2019). L'université entrepreneuriale: Eléments historiques et débat. *Marché et organisations*, 34 (1), 87-108.
- [65] Schaeffer, V., & Matt, M. (2016). Development of academic entrepreneurship in a non-mature context: The role of the university as a hub-organisation. *Entrepreneurship and Regional Development*, 28, 724-745.
- [66] Schreier, M. (2014). *The SAGE handbook of qualitative data analysis*. London: Sage.

- [67] Schulte, P. (2004). The entrepreneurial university: a strategy for institutional development. *Higher education in Europe*, 29 (2), 187-191.
- [68] Shah, S. K., & Panhke, E. C. (2014). Parting the ivory curtain: understanding how universities support a diverse set of startups. *The Journal of Technology Transfer*, 39 (5), 780-792.
- [69] Siegel, D. S., Veugelers, R., & Wright, M. (2007). Technology Transfer Offices and Commercialization of University Intellectual Property: Performance and Policy Implications. *Oxford Review of Economic Policy*, 23 (4), 640-660.
- [70] Siegel, D. S., Waldman, D., & Link, A. (2004). Toward a Model of the Effective Transfer of Scientific Knowledge from Academicians to Practitioners: Qualitative Evidence from the Commercialization of University Technologies. *Journal of Engineering and Technology Management*, 21, 115-142.
- [71] Stahl, B., Obach, M., Yaghmaei, E., Ikonen, V., Chatfield, K., & Brem, A. (2017). The responsible research and innovation (RRI) maturity model: Linking theory and practice. *Sustainability*, 9 (6), 1036.
- [72] Storr, R. (1952). *The Beginnings of Graduate Education in America*. Chicago: University of Chicago Press.
- [73] Thietart, R. A. (2007). *Méthodes de recherche en management*. Paris: Dunod.
- [74] UNESCO Global Education Monitoring Report UNESCO International Institute for Educational Planning (IIEP). (2017). Six ways to ensure higher education leaves no one behind.
- [75] Veysey, L. (1965). *The Emergence of the American University*. Chicago: University of Chicago Press.
- [76] Villani, E., Rasmussen, E., & Grimaldi, R. (2017). How intermediary organizations facilitate university-industry technology transfer: A proximity approach. *Technological Forecasting and Social Change*, 114, 86-102.
- [77] Wacheux, F. (1996). *Méthodes qualitatives de recherche en gestion*. Paris: Economica.
- [78] Wanlin, P. (2007). L'analyse de contenu comme méthode d'analyse qualitative d'entretiens: une comparaison entre les traitements manuels et l'utilisation de logiciels. *Recherche Qualitatives, Hors Série*, (3), 243-272.
- [79] Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, 5 (2), 171-180.
- [80] Wong, P. K., Ho, Y. P., & Singh, A. (2007). Towards an "entrepreneurial university" model to support knowledge-based economic development: the case of the National University of Singapore. *World Development*, 35 (6), 941-958.