MaRIHE Erasmus Mundus

With the support of the Erasmus+ Programme of the European Union

Master Thesis Reader

Research and Innovation in Higher Education

2021

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Erasmus Mundus Joint Master Degree

Research and Innovation in Higher Education

Master Thesis Reader

2021

Edition Universität für Weiterbildung Krems

2022

ISBN: xxx

With the support of the Erasmus+ Programme of the European Union

The Master in Research and Innovation in Higher Education (MARIHE) is an Erasmus Mundus Joint Master Degree offered by a consortium of University for Continuing Education Krems (Danube University Krems) (Austria), Tampere University (Finland), University of Applied Sciences Osnabrück (Germany), Eötvös Loránd University (ELTE) (Hungary), Beijing Normal University (China), and Thapar Institute of Engineering and Technology (India). Prior to year 2018, MARIHE was conducted by the four partners Danube University Krems (Austria), University of Tampere (Finland), University of Applied Sciences Osnabrück (Germany), and Beijing Normal University (China).

University for Continuing Education Krems

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1 Introduction

1.1 Background information on the creation of the Master Thesis Reader

Each year, a Master Thesis Reader is published by University for Continuing Education Krems/Austria. This reader collects the master's theses of one cohort. Each graduate writes an extended summary (an extract of his/her thesis), which serves as one chapter of the reader. In his/her summary, the graduate gives insight into the background (problem statement, research question, theoretical background), the methodology (approach in use), the key findings (main results), recommendations (for future research) and references.

This book is a collection of summarized master's theses produced as the final and individual research project within the Erasmus Mundus Joint Master Degree Research and Innovation in Higher Education (MARIHE), cohort 6 (2019-2021).

For further reading, the full master's theses texts are available in the library of University for Continuing Education Krems, accessible on the following link: Basic Search: Discovery Service for DONAU UNI KREMS (ebscohost.com)

1.2 Introduction of MARIHE programme

In Europe as well as in other regions of the world, fundamental transition processes are taking place in the systems of research, innovation, and higher education: from regulation to deregulation and competition, from steering to market, from administration to management. Higher education and research institutions need highly trained experts who are able to analyse these new contexts and who have management and leadership skills to deal with the changes. The Master in Research and Innovation in Higher Education (MARIHE) is an Erasmus Mundus Joint Master Degree with a duration of four semesters/two years, leading to a master's degree with 120 ECTS. It is offered by a consortium of University for Continuing Education Krems (Danube University Krems) (Austria), Tampere University (Finland), University of Applied Sciences Osnabrück (Germany), Eötvös Loránd University (ELTE) (Hungary), Beijing Normal University (China) and Thapar Institute of Engineering and Technology (India). Prior to year 2018, MARIHE was conducted by the four partners Danube

University Krems (Austria), University of Tampere (Finland), University of Applied Sciences Osnabrück (Germany), and Beijing Normal University (China).

MARIHE provides students a unique opportunity to develop a sound understanding of higher education systems and university development around the world. Students have the opportunity to study in at least three different universities and countries in Europe and Asia. During an internship provided by international enterprises and organisations, they get insight into fields of practice.

As an Erasmus Mundus Joint Master Degree, MARIHE is supported by the Erasmus Mundus Programme of the European Commission. By these standards, it is one of the leading master programmes in Europe. MARIHE addresses university graduates that want to pursue a career in the higher education and research sector as managers, administrators, consultants, policy analysts, researchers and decision makers. Possible employers are higher education and research institutions, public bodies such as ministries for science and education, enterprises specializing in education, think tanks and non-governmental organizations. Graduates of MARIHE are able take the lead in the future management and development of research and innovation in higher education.

International and European reform agendas have recently focused on a number of measures that are argued to lead to the modernisation of higher education as a sector and turn the higher education institutions into strategic organisational actors to develop countries and societies. The programme supports the development with respect to the professionalisation of institutional leadership and management functions accompanied by an emerging training and support structure for institutional managers and leaders. MARIHE is a cooperation and mobility programme in the field of higher education that aims to enhance the quality of European higher education and to promote dialogue and understanding between people and cultures through cooperation with Third Countries. In addition, it contributes to the development of human resources and the international cooperation capacity of higher education institutions in Third Countries by increasing mobility between the European Union and these countries.

The curriculum of MARIHE reflects on three perspectives on the change logics involved in

the worldwide developments in higher education and in higher education institutions:

- the perspective on Systems in Transition, focussing on general developments and on globalization and regionalization (Europe, Africa, Americas, Asia) in higher education
- the perspective on System-Institution-Interaction (e.g., funding of research and innovation)
- the perspective on Institutional Change (e.g., “change management”).

Furthermore, modules on Theoretical Background introduce fundamental issues of higher education management. Another emphasis is given to Transferable Skills (e.g., research methods, presentation skills, languages). With the implementation of a developed curriculum in 2018, students can choose from four different specialization tracks in the second half of the study programme: Research and Innovation, Leadership and Management, Institutional Research, Learning and Teaching.

For more information on MARIHE, please visit the programme´s website: www.marihe.eu.

Krems 2022, University for Continuing Education Krems (Danube University Krems), coordinating institution of MARIHE.

2 The Freedom of Information Act in the Mexican Higher Education System: An Agency Theory Framework

Emmanuel Aguilar Burgoa

2.1 Introduction

2.1.1 Research Problem

The Freedom of Information Act came into effect in Mexico in 2002, with stronger reforms made in 2014. Freedom of Information Acts (FOIA) are laws that promise the equitable provision of timely, relevant, and often new information about government. They signal a commitment to transparency, primarily because transparency is thought to promote a fair and accountable public administration (Lagunes & Pocasangre, 2019, p. 162) The objective of FOIA regulations in Mexico has been focused on increasing transparency of public organizations and limiting corruption.

Mexico is classified by national and international studies as a highly corrupt country. According to the 2019 edition of the Global Corruption Barometer, 90% of the population in Mexico thinks that corruption in government is a big problem (Pring & Vrushi, 2019, p. 10). At the same time, the 2017 Leaders Edition of the Open Data Barometer, dedicated to compare the amount and quality of public information around the world, rated Mexico with 69 out of 100 possible points, positioning the country above Japan (68), the US (64), or Germany (58) in terms of open data (*Open Data Barometer*, 2021). The results of these studies are contradictory but at the same time, they make evident the room of improvement in anti-corruption and transparency policies. In that sense, an opportunity area relates to the limited information that there is about how FOIA regulations affect sector specific organizations, such as universities.

In the context of Higher Education, corruption has become more evident in Mexican universities, undermining their trustworthiness, and curbing their reputation. Corruption in HE systems was made public by recent research such as the “Master Scam” (Carrillo-

Hinojosa, 2015a) or the study “Planning, Programming, and Accountability of the Budget of Universities in Mexico: Reasons, Results, and Challenges” (Ugalde & Mata Zenteno, 2019). Both studies present evidence on how HE legitimacy is at a crossroad when it comes to transparency policies.

The legitimacy crisis that HEIs are experiencing in Mexico has been exacerbated by external pressures coming from the social, political, and economical context where universities are embedded (e.g., Globalization, marketization, massification). These external pressures, which are in constant tension with university autonomy, have accelerated the implementation FOIA regulations in the HE system. However, these regulations are focused on increasing the amount and quality of public information that universities provide, and little is known about how universities react to FOIA policies or their impact on HEIs dynamics. For instance, there is little information regarding the possible effects that transparency demands have in the core activities of HEIs (teaching, research, outreach), or if accountability and transparency mechanisms in universities are responding accordingly to stakeholders, social demands, and global trends.

2.1.2 Research Purpose and Questions

The general purpose of this study is to understand the dynamics of FOIA regulations in Mexican public universities, through the theoretical lenses of Agency Theory. The following general research question aims to guide this research:

- How is the Freedom of Information Act influencing the Mexican HE system?

- From this general question, three more specific questions arise to guide the study:

- How does FOIA regulations connect the actors in the Mexican HE system, and what are the characteristics of these connections?

- What are the effects that FOIA regulations have in Mexican HEIs?

- How are FOIA regulations influencing accountability and transparency in the Mexican HE system?

2.2 Analytical Framework for Freedom of Information Acts (FOIA) in HE Systems

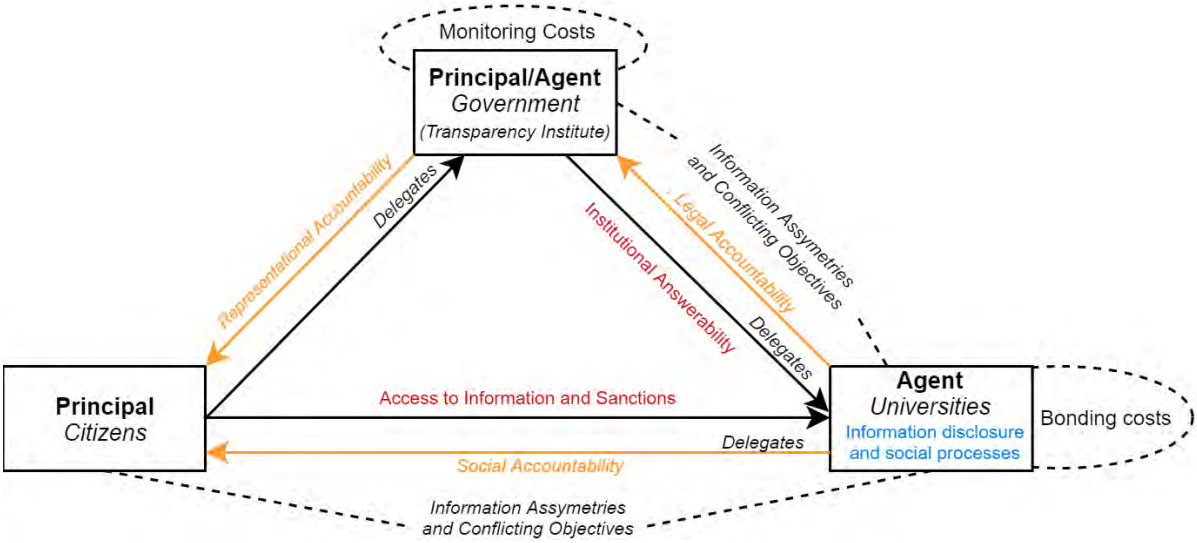
Figure 1 shows a representation of the analytical framework that will be used for this research. This framework uses the theoretical lenses of Agency Theory to explore the connections —named as relationships under Agency Theory— that exists between actors in the HE system, as well as the characteristics of these connections. Kivistö and Zalyevska (2015, p. 134) describe three conditions that must exist in order for a principal-agent relationship to arise: (1) government and citizens delegate tasks to universities; (2) they allocate resources to universities for accomplishing the tasks; and (3) they present interest in monitoring the accomplishment of the tasks. By analysing these conditions, this framework allows to answer the first specific research question.

Also, this framework assumes that the relationships that arise in the system are characterized by the conflicting goals and the information asymmetries that exists between actors in the system. Literature shows that when these two elements are present in a relationship, an agency problem emerges, requiring the actors to adopt surveillance and governance mechanisms (Panda & Leepsa, 2017, p. 82) . However, the adoption of these mechanisms generate costs for the actors in the system. For the purpose of this research, the costs arising in HEIs are defined as the effects that the adoption of FOIA regulations have on these institutions. With the recognition of these elements and characteristics, this framework allows to answer the second research question. Finally, the framework incorporates the typologies developed by Mabillard and Zumofen (2017), Cucciniello et al. (2017), and Lindberg (2013) to explore how FOIA regulations influence accountability and transparency in the principal-agent relationships of the system. By building on this previous research, this framework will be helpful to answer the third specific research question.

This framework involves the following components: (1) the interactions between principals and agents in the Mexican HE system; (2) the different types of accountability enforced by the principals in the system; (3) the types of transparency that emerges in the relationship between different actors; and (4) the interactions between transparency and accountability in the Mexican He system. In Figure 1, the black-lined boxes and elements represent the

components of Agency Theory, the yellow ones represent the type of accountability and its spatial direction, the interactions between the concepts are represented in red colour, and the blue elements show the types of transparency.

Figure 1 Analytical Framework for Freedom of Information Acts in HE Systems



Note: Own elaboration based on (Cucciniello et al., 2017; Kivistö & Zalyevska, 2015; Lindberg, 2013; Mabillard & Zumofen, 2017).

2.3 Research Methodology

2.3.1 Research Design

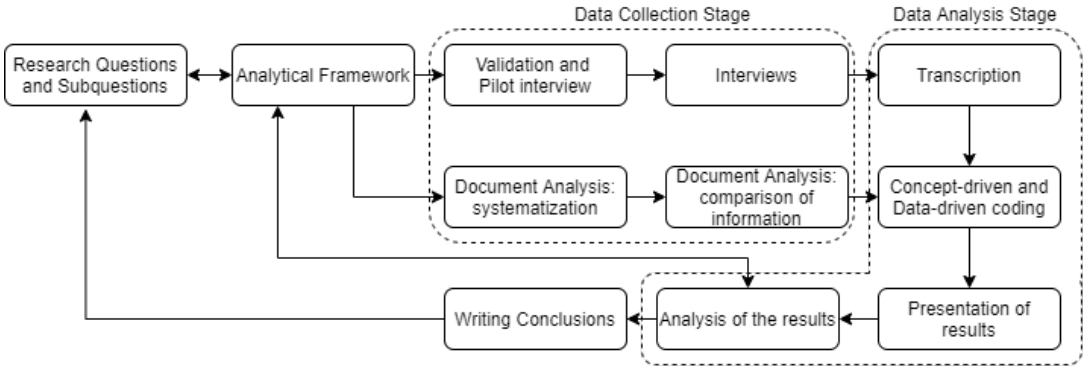
This research proposes an exploratory and qualitative type of design to answer the research questions. Qualitative research often explores areas that are understudied and searches for emergent theory, as opposed to the quantitative research which tries to test a well-established theory (Creswell & Creswell, 2018, p. 99). Exploratory questions are aimed at investigating a phenomenon that is little understood (Creswell, 2007, p. 107) and when researchers face situations in which the intervention being evaluated has no clear, single set of outcomes (Baxter & Jack, 2008, p. 548).

The characteristics of a qualitative and exploratory study fit the research field of transparency in Mexican HE. On the one hand, studies measuring the quality and amount of information in HEIs have been used to some extent in scholarly research, but studies measuring the costs of information that organizations assume in HE systems have not been extensively conducted in

the context of Mexico. Moreover, the study of accountability in the context of Mexican HE and the relationships that exist with transparency, are also understudied. Because of the unexplored state of these concepts in the context of Mexican HE, a qualitative and exploratory approach is more suitable.

The approach that this study takes is a case study. Creswell (2007, p. 73) defines a case study as an exploration of a bounded system over time, through detailed, in-depth data collection involving multiple sources of information, and a case description. Also, researchers should use the case study approach when contextual conditions are relevant to a certain phenomenon (Baxter & Jack, 2008, p. 545). The case study for this research is built on Mexican HEIs with autonomy —which is highly complex and context dependent— as well as the FOIA regulations that they must follow. To have an overview of the research procedure, a flowchart is presented in Figure 6 with the different research stages.

Figure 2 Research Procedure Flowchart



Notes: Own elaboration

2.3.2 Data Collection

2.3.2.1 Sampling

This qualitative case study is focus on the Transparency Units managers, working in 13 universities with Autonomy in Mexico (See Figure 7). The rationale behind this selection is that first, subnational universities represent the largest HE subsystem in Mexico, serving most of the students enrolled in public universities in the country. Accordingly, the high importance of these universities for regional and national development reinforces the relevance of this

research. The second reason is related to the autonomy status that subnational universities enjoy. Literature shows that the concept of transparency in Mexican HE is in constant tension with the concept of university autonomy and therefore, it highlights the relevance of focusing on this subsystem.

Figure 3 Geographical Location of HEIs used for the Sample.

For this purpose, a convenience sampling is used. In a convenience sample, participants are chosen based on their convenience and availability (Creswell & Creswell, 2018, p. 212). The rationale behind is given by the difficult to reach managers working in Transparency Units, since in many cases they are unwilling to cooperate, showing a secretive behaviour and feelings of discomfort or fear. The 13 HEIs that are part of the sample, are distributed in different geographical positions of the country, and were chosen based on the availability and willingness of Transparency managers to work on this research.

2.4 Main Findings

The purpose of this research is to answer the question how is the Freedom of Information Act influencing the Mexican HE system? Through this question, this research looks to explore the agency problem and costs that arises in the system, and how the concepts of transparency and accountability interacts differently in each relationship. This research relies on an analytical framework based on the Agency Theory, and it shows how the interaction of FOIA regulations in the HE system can be represented through principal-agent relationships. The opportunistic behaviour of university agents and the conflicting goals that actors in the system have, create agency problems characterized by information asymmetries and conflicting

goals.

Also, this research uses an exploratory qualitative approach based on interviews as the main source of information and document analysis as a compliment. Interviews were conducted to transparency managers in 13 universities with autonomy in Mexico. Document analysis was conducted to the Institutional Development Plans (IDP) of the same universities, with the intention to explore how universities integrate transparency in their strategic planning. Additionally, the study complements the document analysis by collecting information from an information request made to 31 HEIs. The purpose of this the information request was to gather information about how universities respond differently to the information demands of citizens.

The first specific question that is answered with this research is How does FOIA regulations connect the actors in the Mexican HE system, and what are the characteristics of these connections? Using the theoretical lenses of Agency Theory, this study finds evidence about how FOIA regulations connect the actors in two principal-agent relationships in the system: citizens-university and government university relationships, both of them with different characteristics. In the case of the government-university relationship, information asymmetries are limited between actors, due to the static nature of information that government requires and the adaptation that HEIs have done to government requirements. However, conflicting goals between actors are evident since government intends to use FOIA regulations to steer universities, and the intention of universities is to protect its autonomy.

In the case of the citizen-university relationship, information asymmetries are high due to the dynamic nature of information that citizens require, and the advantageous information that university agents have about their operation and the applicable regulations. In this citizen-university relationship, conflicting goals are based on the citizens intention to use FOIA regulations to access information directly, and once again, the university intention is to protect its autonomy. The autonomy that universities protect are also in conflict with the intention to use FOIA as a tool to legitimate themselves. In all cases, autonomy represents a shield that universities use to resist to the implementation of FOIA regulations.

Moreover, this research finds evidence about how information asymmetries and conflicting

goals create an agency problem in both relationships, characterized by the opportunistic behaviour and the risk-aversion nature of university agents. Opportunistic behaviour is more evident in the citizens-university relationships since university agents have enough discretionary power to interpret regulations and citizens request differently and, in many cases, for the benefit of the organization. University agents also show a risk-aversion to go beyond the mandatory requirements, meaning that they do not provide any further information beyond the strictly described by law. This is also evident in the lack of voluntary disclose of information and the aversion to communicate directly with citizens.

The second specific questions that is answered in this study is what are the effects that FOIA regulations have in Mexican HEIs*?* Using the theoretical lenses of Agency Theory, this research finds evidence about how the agency problems that arises in both relationships, have effects in the form of boding costs for universities. Bonding costs are those related to setting up and operating a monitoring system in the university (Panda & Leepsa, 2017, pp. 83–84). Although costs are usually associated with the market, a large amount of the costs that HEIs must assume from FOIA regulations are non-market and they arise in four different institutional dimensions: Leadership, People, Operation, and Planning and Monitoring.

As the head of universities, the role of Rectors in the implementation of FOIA regulations is crucial for the regulations to operate properly, and the consequences of a deficient implementation are assumed in terms of legitimation costs. However, many of them decrease these costs by pushing the alignment of FOIA regulations with the institutional development plans but limiting the support and influence of transparency departments. At the same time, universities assume bonding costs related to their planning and monitoring strategies, since they have to adapt to new values, policies, actions, and performance indicators.

The change in the strategic planning of universities have a consequence at the operational level, where universities must assume costs related budget constraints and the lack of technological infrastructure. However, evidence shows that the People dimension is the most affected one by FOIA regulations and it plays a crucial role for the sustainability of these regulations. In that sense, people experiment costs in terms of their career (decrease of productivity, skills, and power) and psychosocial aspects (increase in administrative burden, negative feelings, and ethical issues).

The third specific question is how are FOIA regulations influencing accountability and transparency in the Mexican HE system? In that sense, this research explains how FOIA regulations pushes a specific type of transparency and accountability in each relationship of the system. Universities use transparency predominantly as a mechanism, and evidence of this can be found in their Institutional Development Plans. This perspective of transparency is defined as an institutional relation or arrangement in which an agent can be held to account by another agent or institution (Bovens et al., 2014b, p. 9). Since universities rely mostly on this perspective, transparency as a value is loosely identify in their plans. Also, universities tend to respond more clearly to legal accountability in comparison with social accountability, looking closely to government requirements and not to citizens demands.

However, it is not precise to assume that one category of transparency of accountability is completely dominant in HEIs, since these concepts and their categories are intertwined in the development plans of universities. Although identifying the dominant types of transparency and accountability in HEIs provides an overview about the current situation of these terms in universities, a transition towards transparency as a value and social accountability can be expected.

The different combinations that exist in HEIs between transparency and accountability create these two concepts to interact differently in each relationship of the system. In the government-university relationship, these two concepts interact in the form of *institutional answerability*, meaning that universities must be answerable according to FOIA, but in this case regulations do not create any type of enforcement. In the citizens-government relationship, transparency and accountability interact in the form of *access to information and sanctions*, mainly because the nature of the information that citizens request is compromising for university agents, and they can be punished if they comply with citizens expectations.

From a broader perspective, the results from this research make three contributions to the field of HE studies. To begin, this study highlights the relevance of Agency Theory to understand the impact of a policy in the context of HE. Researchers have pointed out the use of Agency Theory in the field of system policy and institutional management, and how it allows the categorization of different governance conditions that cause the agency problem (Yallew et

al., 2018, p. 95). In that sense, this research contributes to scholarly research by incorporating the citizen as a principal, expanding the use of the Agency Theory in with new actors and different social context.

In addition, this research also highlights the role that university autonomy has in the implementation of new policies. This research shows evidence about how university autonomy is seen as a "protection shield" against the implementation of new policies. The question is how long this protection shield can last, and how the tensions that arise between autonomy and the different goals of the actors can lead to a new conceptualization of the term. This is consistent with some authors who have pointed out how the dominant narrative of political reform is moving away from traditional beliefs in university autonomy that are built on institutional trust and linked to professional autonomy (Enders et al., 2013, p. 20).

The final contribution to the broader discipline of Higher Education studies, is that this research highlights the trends of horizontalization and bureaucratization affecting HE systems. This research shows how external stakeholders can access universities information —in most of the cases— without the intervention of any government institution. By studying how FOIA regulations allow university stakeholders to steer or influence decision making in HE institutions contributes to the studies of horizontalization in HE. Horizontalization is a growing trend in public organizations, in which administrations have opened up and moved closer to citizens. (Mabillard & Zumofen, 2017, p. 115). Similarly, this research shows evidence about the increasing administrative bureaucratization in Mexican universities, and it provide empirical evidence for research in this field.

2.5 Observations and Recommendations for Future Research

Some relevant observations and recommendations for future research can be draft from this research. One first observation —that goes beyond the scope of this study— is that it is important to consider the relevance of straightforward and honest communication when interviewing managers, particularly from public organizations. When managers were reached out and invited to the interview, many of them did not answer or many of their responses demonstrate doubts and anxiety feelings.

However, when more details about the goals of the interview were provided and when doubts

were clarified during the interviews, managers were very much motivated and open to participate. In many cases, they provided further information, databases, and reports to compliment this research and in direct communication via email. This shows how relevant it is for researcher to empathize and create a “safe space” for interviewees, and how this clear communication can indeed, influence the results and provided further and richer information.

A second observation is related to the limited impact that FOIA regulations have in the academic dimension of universities. When this research was first draft, it was assumed that transparency procedures could affect the daily activities of researchers and professors. However, regardless the sector specific activities that the university conducts, the impact of FOIA in this regard seems very limited. This might be related with the similitudes of transparency units in all public organizations and the trend of “bureaucratization” in universities. However, these are assumptions that in this case, were out of the scope of this research. Further studies on this field could —and should— be done to better understand the effects of transparency in universities.

Finally, this exploratory study provides a good overview and recommendations for future research that can be pursue in this field. For instance, there is more information needed about the ex-ante contracts in transparency regulations, and how adverse selection is pervasive and influence the quality outcomes of transparency in universities. Later, it would be interesting to use an alternative theory to analyse the same problem but from a different theoretical framework —e.g., Institutionalism, Complex Theory, Stakeholder Theory—. Moreover, it would be interesting to explore the role that social media has as a tool for transparency and accountability in universities. Researchers can ask themselves, how does social media is used as a tool for transparency in HEIs? Are HEIs following a trend towards the use of social media as a transparency tool? With the exploration of these questions, researchers would provide valuable insights about the increasing role and relevance of social media in universities.

Finally, researchers could focus future studies on understanding the influence of Open Government in public universities. Open government is a global trend that encourages public organizations to be more horizontal towards citizens, and to establish a direct connection between institutions and stakeholders to solve the most pressing issues. This umbrella concept

is based in four pillars: transparency, accountability, civic engagement, and innovation. Since these four elements are present in most of universities, does that mean that they are following an Open Government approach, perhaps unconsciously? What are the boundaries between accountability, transparency, and Open Government in HE? Is it important for universities to be part of this trend? This last topic has indeed many questions and opportunities for researchers to explore the ever-shifting boundaries between Higher Education and Public Administration studies, and by following these recommendations, researchers can complement and "put the puzzle together" in the complex field of transparency in universities.

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3 Internationalization of European Virtual Universities: A Qualitative Study of the Challenges

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Abstract: This qualitative research examines internationalization in online higher education. It focuses on the challenges of internationalization faced by European virtual universities. A thematic analysis approach is used to interpret the data collected from interviews and primary documents from eleven institutions. The findings showed that strategic cooperation is the main pillar for internationalization in European virtual universities. The rationales for engaging in internationalization are developmental and humanitarian, linked to access, enhancement, and lifelong learning. The most relevant challenges found are related to cooperation with multilateral organizations, innovation in lifelong learning, international recognition, models for strategic management of internationalization, and enhancing options to mobility. Finally, the study presents several recommendations for practitioners and managers in the internationalization of European virtual universities.

Keywords: International program and provider mobility, Internationalization of higher education, Online education, Transnational higher education, Virtual universities.

3.1 Introduction

Online higher education is surrounded by a contrasting debate. On the one hand, UNESCO and ICDE (2015) estimate that the number of higher education students will rise from 99.4 million in 2000 to above 414 million in 2030. For supplying the overflowing growth, “online open and flexible education represents a core range of strategies within a variety of contexts (...) to contribute to meeting this growing demand” (UNESCO & ICDE, 2015, p. 1). On the other hand, Garrett (2018) and Protopsaltis and Baum (2019) show that, in most countries, the market share of online higher education remains marginal. Furthermore, the reduction in costs and the improvement in learning outcomes are not a common characteristic. So, despite the promising role of online higher education in the future, the current situation seems to be confronted with several challenges.

The COVID-19 pandemic has sped up the use of online higher education worldwide. One of the major concerns relates to online students from other countries. Universities UK International (UUKi) (2021) defined transnational online education, “as provision delivered mainly through digital means (including blended learning) to students based primarily overseas” (p. 3). The major needs highlighted in this area are research and dissemination of information “on transnational online student characteristics and outcomes and case studies of successful transnational online higher education provision (emphasizing flexibility, employability and outcomes) (UUKi, 2021. p. 11). The understanding of the field of action of transnational online higher education can strengthen its role and its successful provision in different countries and regions.

Besides mobility of providers, policies, and people, transnational online higher education is a segment of internationalization of higher education (IoHE) (Knight, 2004). IoHE is defined as “the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education” (Knight, 2004, p. 11). Hudzik (2015) proposed that IoHE consists of three pillars: international student and staff mobility; internationalization at home and digital learning; and strategic cooperation, partnerships and capacity building. The pillars allow identifying institutional actions in internationalization: mobility (students and academic staff), at home activities (curriculum, online courses, etc.), and cooperation (teaching, research and third mission). Therefore, online transnational goes beyond recruiting international students and requires institutions to embed international, intercultural, and global dimensions in the functions, purposes, and delivery of education.

The rationales for implementing IoHE are diverse. Knight and de Wit (1995) identified four main rationales: political, economic, sociocultural, and academic. Knight (2012) enhanced the initial framework by introducing further five rationales for IoHE at an institutional level: branding and profile, income generation, student and staff development, strategic alliances, and knowledge production. Seeber et al. (2016) stated that the institutional rationales for IoHE are “oriented towards legitimacy and resources, status and reputation” (p. 1). Enhancing this panorama, Streitwieser et al. (2019) proposed a humanitarian rationale for IoHE, higher educational activities in refugee camps and contexts amid humanitarian crisis. Thus, higher education institutions justify the implementation of IoHE from political, economic,

sociocultural, academic, reputational, and humanitarian rationales.

Higher education institutions have focused on mobility of students, which represents less than 20% of the student population in developed countries and about 1% in developing countries (de Wit & Jones, 2018). The economic rationale became the engine of a multi-million-dollar industry driven by the mobility of students or institutions (de Wit, 2020). But not all institutions can offer physical mobility as is the case of virtual universities. This contrast allows hypothesizing that IoHE in online education could pursue rationales different to the economic one. Further, due to the expectations set by UNESCO and ICDE (2015) to enhance equity, access, and learning outcomes, the challenges they face to grow internationally are different to on-campus education.

Online higher education is mostly offered by virtual universities, providers of higher education "that deliver credit courses and degree programs to students in different countries through distance education using predominantly the internet technology mode, generally without face-to-face support services for students" (Knight, 2012, p. 10). The majority of virtual universities are institutions which traditionally offered distance education and subsequently converted to online higher education (Gašević et al., 2015). Previous literature has identified the challenges related to developing flexible pathways to higher education (Palvia et al., 2018), adaptation of higher education to ICT (Caravalho, 2014), institutional efficiency (Siegle, 2016), and the growing online competition (Stone, 2019). This research is focused on the institutional challenges from the perspective of IoHE.

The research question guiding this study was: what are the challenges that European virtual universities face for the internationalization of online higher education? Its purpose was to identify the characteristics of IoHE in European virtual universities and describe the challenges that these institutions meet to strengthen their internationalization processes. The results are relevant for the internationalization offices, managers and academics of European virtual universities because it presents a characterization of the purposes and approaches to IoHE. The results also contribute to the existing literature by highlighting the particular field of action on IoHE in virtual institutions and presenting the challenges for developing internationalization strategies at an institutional level.

3.2 Methodology

This study used a qualitative method to understand a central phenomenon, to explain the context, describe processes, and find out people's perspectives on the research question (Creswell, 2013). I collected the data through online interviews with academics involved in internationalization and international relations officers. Additionally, I collected the information on institutional internationalization in the web pages of the universities. I analysed these pieces of data through thematic analysis, "a method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79). The purpose of using thematic analysis was to produce a pragmatic view of the findings.

The procedures for data collection, data analysis and generation of results had nine key steps. First, I delimited the sample. Second, I designed the interview protocol and the informed consent form. Third, I reached the sample with a recruiting email. Fourth, I carried out interviews (recorded and transcribed) and collected the information from the internationalization websites of the institutions. Fifth, I coded the data through qualitative data analysis software (Atlas.Ti). Sixth, I constructed a coding framework through a data-driven approach. Seven, I checked reliability with a peer for inter-coder agreement. Eighth, I identified and named the themes in the data. Finally, the participants received a report to check validity.

The participant sample for this research consists of five members of staff working in European virtual universities from Finland, Italy, the Netherlands, Spain, and the United Kingdom. The primary documents used in this research consist of webpages from eleven universities, including the interviewed institutions from eight countries. This sample derived from the database of higher education institutions associated with the International Council for Open and Distance Education (ICDE) and with the European Association of Distance Teaching Universities (EADTU). These organizations associate institutions offering distance, open, online, and blended education worldwide and in Europe. Among the associated higher education institutions, I selected institutions operating online, in a language accessible for the researcher (English, Portuguese, Spanish), willing to take part in an online interview.

3.3 Findings: Internationalization in European Virtual Universities

Virtual universities differ in their approach to IoHE from on-campus universities. They define IoHE as cooperation. Participant B stated (professor, researcher, and advisor for e-learning):

In fact, we do not speak so much about internationalization. We speak about international cooperation. Basically, the important thing is to cooperate. It is not this idea of importing and exporting people as such. What we are looking for is to cooperate and develop mutually beneficial relations.

Cooperation consists of four segments in which virtual universities operate. First, cooperation with organizations working in enhancing access to higher education (governments, intergovernmental organizations, and non-governmental organizations). Second, cooperation with industries for producing short courses for reskilling, upskilling, or deep skilling human talent. Third, cooperation with on-campus higher education institutions to establish virtual mobility programs, support their digitalization strategies, or create network curricula. Finally, cooperation with umbrella or network organizations for distance, online, open, and flexible education for developing research, training, projects, dissemination of research, and creation of open educational resources (OER).

The participants agreed that the most important rationale for engaging in IoHE is their institutional mission, enhancing access to higher education and offering opportunities for students that cannot access on-campus education. They identified their mission and rationale for IoHE with the development goal four: inclusive and equitable quality education and promotion of lifelong learning opportunities for all. The participants also highlighted the role that online education can play in higher education for refugees and contexts living humanitarian crises (projects such as the University for Refugees or E-health programs for least developed countries). For this purpose, the cooperation with governments, intergovernmental organizations, and non-governmental organizations represent a key strategy to support their educational actions and to fulfil the institutional mission. Therefore, the developmental and humanitarian rationales guided their actions in IoHE.

The European virtual universities share characteristics for being public open universities; there is one per country, in most of the cases; most of them stem from the tradition of distance

education; they cooperate at a European level in the same network organizations; and they belong to the European Higher Education Area. This differs from the context of the USA where the educational market is dominated by for-profit institutions (Protopsaltis & Baum, 2019). Therefore, the challenges that European virtual universities face could be similar, despite the differences among institutions and nations. The five major challenges for European virtual universities identified in this study are:

1. ***Enhancing cooperation with international governments multilateral organizations****:* Since the governments and international organizations develop projects to enhance access to higher education, build capacities, and promote humanitarian educational actions, virtual universities can contribute their experience. This cooperation creates symbiotic relationships in which virtual universities fulfil their mission, get funding, and contribute in diverse international contexts.

2. ***Innovating in lifelong learning:*** The growing demand for continuous upskilling, reskilling, and deep skilling in diverse fields, plus an aging population that are not able to return to on-campus education open a vast field of action for virtual universities. This poses the demand of establishing industry-driven courses, innovating the delivery formats, and establishing transferable qualifications readable in both the academic and vocational contexts. This challenge implies creating possibilities for transferring innovations in agriculture, health, human rights, public management, among others, to contexts where innovations can play a role in economic and social development.

3. ***Enhancing international recognition****:* International terminology, quality, accreditation, and reputation frameworks are mostly oriented to on-campus education and, in some contexts, online credits and degrees and not recognized as valid. It is necessary to build an international reputation, positive reception, and international recognition for transnational online education. Towards this challenge, universities work in transparency frameworks, international cooperation with on-campus institutions, in developing OERs, and with international research centers as strategic actions to gain recognition of their educational offer.

4. ***Establishing models for the strategic management of IoHE****:* In internationalization

of virtual universities the most outstanding activities are international cooperation, development of OERs, development of international research projects, internationalization of the curriculum, and virtual mobility. Most of these actions are developed by academics. Hence the international units must assume activities such as coordinating international projects; building internal capacities; leading international communications and marketing; creating network opportunities for academics; or, fundraising.

5. ***Strengthening online options for inter-institutional cooperation involving students**:* Virtual mobility is in disadvantage since it cannot offer what students look for in mobility: "to live abroad and meet new people, improve foreign language proficiency, develop transversal skills" (European Union, 2014, p. 3). There are many initiatives such as collaborative online international learning (COIL), mirror classes, network curricula, tele-tandem, among others, developed by academic staff. The challenge here is to institutionalize, replicate, and establish protocols to ground these practices.

These five challenges represent lines of work and shared visions for strengthening the internationalization of the activities of European virtual universities from an institutional perspective. These challenges could be addressed at a program, faculty or institutional level. They can also be addressed by institutional dimension (Gao, 2019): Research, teaching, extension, governance, curriculum, students, and faculty. This view offers an institutional perspective that it allows to see the broad perspective and see the alternatives for the management of the IoHE.

3.4 Recommendations

Based on the challenges identified above four recommendations are drawn to support university managers and internationalization officers to strengthen IoHE at an institutional level.

First, in order to enhance the cooperation with multilateral organizations and governments (challenge 1) and enhance increase innovation in lifelong learning (challenge 2), it is necessary to define the target partners in cooperation (multilateral organizations, industries,

on-campus education, and umbrella organizations) to facilitate the development of specific strategies and products. This strategy is evident in platforms such as Coursera that is divided in three key areas, business, government and campus. It allows specializing companies, audiences, and products.

Second, in order to enhance international recognition (challenge 3), it is imperative to strengthen the power of international partnerships. Strategic partnerships are the basis for most of the online educational platforms: partnerships with the most recognized universities in diverse countries, with renowned industries, and with reputable specialists. These partnerships, alongside the existing established governments and multilateral organizations, can contribute towards the improvement of quality, pertinence and recognition of the education offer.

Third, the fourth challenge identified that there is a need to redefine the role of the internationalization unit. In most cases, the development of partnerships and cooperation in virtual universities are in the hands of academic staff. The international units on the other hand, are responsible for the logistics of mobility and agreements, international communication, attraction of funding opportunities, or networking with international institutions. It is necessary to develop an institutional approach to IoHE, define the actions and responsibilities in each institutional dimension and how the internationalization can contribute and collect data in each dimension.

Finally, the fifth challenge includes difficulty in institutionalizing, replicating and establishing protocols to support alternatives to virtual mobility activities. Academic staff who are solely responsible for initiating cooperation seem to be struggling to replicate such activities. Therefore, it is necessary to provide academic staff with support and incentives to approach these initiatives systemically. If conducted well, these initiatives can lead to new corporation and internationalization strategies.

3.5 Conclusion

This study characterized IoHE in European virtual universities as driven by developmental and humanitarian rationales that fulfil the traditional mission of distance education related to

enhancing access to higher education. The main pillar that supports the strategies for IoHE is strategic cooperation, partnerships and capacity building is the main pillar that supports their IoHE. The five major challenges currently faced by virtual universities are the enhancement of cooperation with multilateral organizations, the innovation in lifelong learning, the development of strategies for international recognition, the redefinition of the models managing IoHE, and the redefinition of mobility. This research sample is limited to institutions within Europe, which could differ from institutions in other regions. For future research, it is recommended to focus on indicators to approach the implementations of internationalization; using multiple case studies to highlight differences in policies; and focusing on emerging topics such as cooperation online and on-campus institutions, international knowledge transfer and specialized actions of virtual universities in IoHE.

3.6 References

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4 Integration of Social Engagement Into Internationalization Strategies: A Study About Brazilian Higher Education Institutions

Nathália Cristina do Rosário

4.1 Background

Internationalization of higher education (IoHE) gained priority in the higher education agenda and consolidated itself as a research field over the last years (Bedenlier et al., 2018). It has developed over the years and became a common goal of higher education institutions (HEIs) around the world. Knight (2012) posits that the increasing commercialization of higher education, the knowledge economy society and the international rankings have influenced the way internationalization has been interpreted and promoted. As a result, economic rationales and increasing competition have been the major drivers of internationalization (Knight & de Wit, 2018).

In face of current global issues, such as the ones outlined in the United Nations' Sustainable Development Goals, and more recently the COVID-19 pandemic, the potential of HEIs contributing to society and addressing societal problems has been emphasized (Chankseliani & McCowan, 2021). There is an increasing understanding that universities should engage more and better with the society, placing the topic as a growing strategic focus. However, social engagement has been neglected by the higher education sector (Benneworth, 2018). As Benneworth (2018) explains, the ideal of world-class universities has prevailed, and higher education policies and strategies have had a stronger focus on pursuing excellence, not encouraging community engagement (Schmidt, 2020).

Social engagement has also been overlooked in the internationalization agenda. Brandenburg et al. (2020) explain that internationalization activities have mainly focused on the HE community and its impact "is more inward than outward looking in that the link to society is usually not made" (p. 33). As such, there is little evidence of the link between social engagement and internationalization of higher education (Brandenburg et al., 2019b). Brandenburg et al. (2019a) argue for a systematic approach to internationalization beyond the

walls of HEIs, a stronger focus on Internationalization in Higher Education for Society (IHES). IHES emphasizes the intentional purpose of internationalization contributing meaningfully to society through social engagement. It is the social responsibility component of IoHE, which "explicitly aims to benefit the wider community, at home or abroad, through international or intercultural education, research, service and engagement" (Brandenburg et al. 2019b, para. 7). However, Brandenburg et al. (2020) stress that, despite important, the link between the agendas of social and internationalization of higher education is yet unexplored.

4.2 Purpose of the Study and Research Questions

Triggered by the IHES concept, this research aimed at investigating how social engagement, by means of university extension, is addressed within the internationalization strategies of Brazilian universities. Mora et al. (2017) assert that social engagement is one of the Latin America universities' missions, and "has been for many years a priority in universities in the region" (p. 531). Adding to that the fact that the internationalization process of HEIs in Brazil has become increasingly intentional and systematic (Leal, 2020). Given the importance of these two topics in the Brazilian HE context, the purpose of the study is to investigate in what ways social engagement is integrated into the internationalization strategy of Brazilian HEIs:

The key research question of this study is: How is social engagement integrated into the internationalization strategy of Brazilian higher education institutions? Under this overarching question, the sub-questions follow:

a) What are the motivations to integrate social engagement into their internationalization strategy?

b) What are the barriers to integrate social engagement into their internationalization strategy?

c) How can international officers support a greater integration between social engagement and internationalization of higher education?

4.3 Theoretical Background

4.3.1 Internationalization of Higher Education

The concept and understanding of internationalization of higher education evolved over the years, as well as research on the topic. It moved from a reactive to a proactive role in the higher education agenda, becoming a more strategic and systematic endeavour, with universities around the world intensifying their efforts to become more internationalized (Leal & Oregioni, 2019). The most widely used definition of IoHE is the one conceived by Knight (2003), who defines it as "the process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of postsecondary education" (p. 2).

Internationalization has become a central strategy in the higher education agenda, but it has been featured by increasing competitiveness, elitism, economic rationales and commercialization of higher education (de Wit et al., 2017; Knight & de Wit, 2018). For Knight (2020), IoHE has gradually changed from a partnership to a competition-based model, and now is optimistically moving towards social responsibility. For instance, Brandenburg et al. (2019a, 2019b) argues that internationalization should focus more on social engagement and making a meaningful contribution to society. Leal (2019) advocates that the "increased immersion of global higher education in an economically-oriented paradigm … calls for cooperative forms of international interaction, explicitly aimed at shaping inclusive and sustainable futures" (p. 38).

4.3.2 The Third Mission of Higher Education

The term third mission is broadly used to refer to the relation between universities and society. Universities interact with society in different ways and at different levels; therefore, third mission is a multidimensional concept that encompasses a wide range of activities (Benneworth, 2018; Mora et al., 2017; Ward & Hazelkorn, 2012). It is also "diffuse and hard-to-characterise" (Mora et al., 2017, p. 515), generating confusion because of the different understandings and names assigned to it. Gimenez and Bonacelli (2021) identified social engagement, outreach, and extension, to name a few. Moreover, according to the authors, "the scope and coverage of the third mission varies considerably between countries and in different contexts" (p. 2).

Universities were always considered “fundamentally societal institutions” (Benneworth, 2018, p. 19). Yet, they have long been seen as “ivory towers”, distanced from their societal context and needs. In a context where educational policies and systems have pushed towards research excellence, third mission has been neglected in institutional strategic priorities, becoming a peripheral activity in higher education (Benneworth, 2018; Mora et al., 2017). More recently, there has been a renewed emphasis on the engagement of higher education with society that goes beyond the need for universities to contribute to scientific development and economic growth (Benneworth et al.,2018). There is a demand for universities to be more engaged with the community and responsive to societal problems and needs. Farnell (2020) argues that a way to support third mission/social engagement is to integrate it as a dimension of existing policies and initiatives within higher education where there is potential for synergies, such as teaching and learning, quality assurance, and internationalization.

4.3.3 Integration between Internationalization and Social Engagement

Maillard (2019) posits that internationalization mainly prioritizes teaching and research activities, and third mission is not explicitly addressed in the literature on the topic, neither in the internationalization policies (Leal, 2020). Until recently, none of the international rankings referred to social engagement as one of the assessment criteria, contributing to the dominance of the research university as the ideal model (Leal, 2020), and placing the topic as a less important activity within the higher education agenda (Salmi, 2009, as cited in Benneworth, 2018). Although internationalization may have secondary positive effects on society, IoHE activities have not been directly targeted to the community, and the internationalization agenda has rarely approached social engagement (Brandenburg et al., 2020).

Recently, the integration between internationalization and social engagement has been gaining attention in the academic literature. For instance, some studies (Gyamera, 2015; de Wit et al., 2020) suggest that community engagement programs can enrich the internationalization process and contribute to developing more internationally and interculturally aware students. Another example is the emergence of the IHES concept, an overlapping area between internationalization and social engagement, explicitly aimed to benefit the society. In a context where universities are expected to engage more and better with the wider society,

internationalization is a potential avenue through which this could happen. Internationalization should be more committed to benefiting the wide society, but this compromise depends on how universities "conceptualise internationalisation and the subsequent strategies they adopt to promote it" (Gyamera, 2019, p. 939) and HEIs prioritize the topic on their institutional strategy (Brandenburg et al. 2020).

4.4 Methodology

This research comprises a qualitative multiple case study with nine Brazilian universities. The HEIs involved in this study were selected because: (a) they were ranked in the 2019 and/or 2020 edition of the Times Higher Education (THE) Impact Rankings, and (b) they submitted data for all 11 (2019 edition) and/or 17 (2020 edition) Sustainable Development Goals (SDGs). These universities were considered to represent a potential and rich area to explore and analyse the theme proposed, as the SDGs helped to catalyse the re-emergence of social responsibility and social engagement in the higher education agenda.

THE Impact Rankings aim to assess universities' performance against the SGDs, being the direct work with the wider society one aspect the ranking tries to explore. As pointed out by Calderon (2019), the participation in the ranking demands a significant effort from universities because of the amount of institutional data and evidence required. As such, the sample of this research was chosen based on the assumption that these HEIs, by participating in the ranking and submitting data to all SDGs considered, would have something to show - a more extensive work with the society in different areas - to decide to invest in this endeavour.

Data was collected through interviews and document analysis. Five universities' representatives took part in an individual semi-structured interview: three international office directors, one rector, and one dean for extension activities. Institutional documents were collected from the HEIs' websites, including institutional development plans, internationalization plans, internal regulation of the university and the international offices, internal resolutions and reports related to the universities' internationalization process.

The data collected was analysed through content analysis. The content analysis of both institutional documents and interviews was conducted in parallel, with support of the software

ATLAS.ti (version 8.4.25.0). Data was analysed following the steps defined by Creswell (2014). First, material was prepared and organized for analysis. In the sequence data was preliminarily examined to gain a general impression of its content, and then it was organized by codes (Creswell, 2014). Initial coding was applied based on the structure of the interview guide. Next, codes were examined and grouped into broader categories, which were then reviewed and refined. The codes and categories were interrelated and interconnected, helping to create the narrative, and the findings were discussed and interpreted to answer the research question of the study. In addition, triangulation of data was used, articulating empirical data, existing literature on the topic and analysis of the broad context of the studied phenomenon.

4.5 Key Findings

Findings from the qualitative analysis suggest that although internationalization is an explicit part of the universities' strategy, university extension is not explicitly integrated into the institutional internationalization plans. The IoHE plans mainly refer to university extension in general terms, and the approach to it is rather shallow and does not specify how the relation with society unfolds. Most of the internationalization strategies aim at teaching and research activities, and the few examples mentioning university extension seem to have a more inward-looking. As such, despite university extension being addressed in the internationalization plans, results suggest the approach to it is mainly rhetorical.

The lack of a greater integration between internationalization and university extension may have several explanations. In a context where educational policies and systems push towards research excellence, university extension is often overlooked in the higher education agenda. There is also a misconception that engaging in these activities means sacrificing internationalization capacity at the institution. Moreover, in Brazil, the government has a strong influence on the internationalization process, shaping what internationalization is and could be, and allowing disregard for university extension as a possibility for international and intercultural engagement (de Wit et al., 2020).

Overall, participants recognized that internationalization can be a tool to create a positive impact on society, enabling mutual learning and growth, but implied these benefits are mainly secondary effects of internationalization and not a result of direct engagement with society.

Research participants identified the lack of interest by academics, the lack of communication and information exchange, the lack of language proficiency, the institutional bureaucratic issues and the prioritization of research as the barriers that hinder a greater integration between internationalization and social engagement.

The study showed that the development of internationalization-extension activities depends mainly on the initiative of motivated academic and administrative staff. It reveals intentionality as a key factor for a greater integration between the two areas. As of the international office, it plays supportive and facilitator roles, with a more passive position, even though it is a central player in the institutional internationalization process. Finally, the evidence implies that the context of the IoHE process in Brazil, with strong influence of the government in defining what a desired internationalization is, contributed to the predominance of other institutional priorities over university extension, hindering other possibilities of internationalization to emerge.

The current global context disrupted the higher education sector and has emphasized even more the social role of HEIs. Therefore, the current moment is contributive in the sense of making universities questioning current internationalization structures and practices. This research can be considered an initial effort to reflect on the ways universities are engaging with society and on how to improve what they are doing. The question that remains is: How can higher education institutions intentionally and purposefully plan internationalization activities to benefit the wider society? The challenge for universities now is on how to address social engagement in a way that it is valued within the internationalization strategy, and the university as a whole, so it can be actively supported, and not only considered a peripheral activity.

4.6 Recommendations

Articulating social engagement in the internationalization strategy is important to guide action, but ineffective if it does not go beyond rhetoric. As stated by Marinoni and de Wit (2019), “the presence of a strategy does not necessarily align with a strategic approach to internationalization if there are no activities to implement it and support structures in place, if the strategy is not monitored, and if progress is not evaluated” (p. 12). Based on the findings,

and aiming at a greater integration between social engagement and internationalization, the following recommendations are presented for HEIs:

- **Track existing initiatives**: A starting point could be tracking existing extension initiatives that overlap with internationalization efforts to strategically build on them.

- **Establish a better communication between the international office and the university extension office**: The international office and the university extension office should work more closely, to maximize their efforts and create synergies. Internationalization and social engagement should not be seen as independent and competing areas.

- **Provide institutional support**: It is important for HEIs' leadership and institutional policies to value and recognize the integration between social engagement and internationalization initiatives so it can become a systematic institution-wide effort.

- **Take advantage of the potentialities of the integration between social engagement and internationalization:** In times of limited physical mobility due to COVID-19, social engagement-internationalization activities can be an important tool to promote internationalization at home, benefiting a greater number of students through engagement with local cultural and international groups.

Further research could involve interviews with the deans for university extension to provide a deeper and more comprehensive understanding on the intersection between internationalization and university extension. Also, considering the academic and administrative staff as main actors of internationalization-extension initiatives, research could be conducted with them to understand their motivations to engage in these activities. It would also be interesting to carry out research with the students involved, and the communities benefited from the existing initiatives, to get a sense of the impact of the activities both on students and society. Results could later be used for advocating in favour of the integration between social engagement and internationalization.

At the national level, the Brazilian Association for International Education (FAUBAI) is the

national reference advocating for the internationalization of the Brazilian HEIs. Aiming at research of greater scope, FAUBAI could conduct a mapping survey among the Brazilian HEIs. An in-depth wide mapping of existing internationalization-extension activities could contribute for further development of policies and programs aiming at strengthening the integration between internationalization and social engagement in Brazil.

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5 Exploring the Role of Organizational Culture on Research Performance in Ethiopian Public Universities from Faculty's Perspective: The Case of Mekelle University

Kibrom Berhane Gessesse

5.1 Background of the study

Although culture, indeed, is a lived experience of members of an organisation, it is only in the late 1970s and at the beginning of the 1980s that "organizational scholars began paying serious attention" to the concept (Cameron & Quinn, 2006, p. 16; McAuley et al., 2007; Morrill, 2008; Trudel, 2019). As scholars argue, one of the main reasons that OC had not been a focus of organisational researchers is that culture encompasses "taken-for-granted values, underlying assumptions, expectations, collective memories, and definitions present in an organization" (Cameron & Quinn, 2006, p. 16). Therefore, because the concept of OC has many facets and is knotty (Tierney & Lanford, 2018; Tierney, 1988), different writers define it differently based on the dimensions they need to emphasise (Morrill, 2008; Taye et al., 2019). These "widely varying definitions and standards for understanding culture" created as much confusion as insight (Tierney, 1988, p. 2).

However, notwithstanding the concept of OC is still inexact, there are agreements among many scholars on its basic assumptions, for example, values, perspectives and beliefs shared by organisational members (Gebremeskel, 2018; Schein, 2004) and behaviours that guide the general practices and actions of a given organisation. Thus, (organisational) culture in higher education is defined as the collective, mutually shaping patterns of norms, values, practices, beliefs, and assumptions that guide the behaviour of individuals and groups in an institute of higher education and provide a frame of reference within which to interpret the meaning of events and actions on and off campus (Kuh & Whitt, 1988, pp. 28-29).

As described by scholars, "culture is an abstraction" (Schein, 2004, p. 3), elusive and complex (Wallach, 1983), and "undetectable most of the time" (Cameron & Quinn, 2006, p. 17).

Culture is also all-embracing (Cameron & Quinn, 2006; Meek, 1988). A culture of an organisation refers to all of its operations (Schein, 2004). Therefore, OC is the most powerful phenomenon that influences the functioning of an organisation. However, it is impractical to include all aspects of culture (Cameron & Quinn, 2006; Meek, 1988; Schein, 2004) to investigate its role in faculty's research performance in the case university. Therefore, the study focuses on the core cultural forces or dimensions: the social and physical environment, mission, leadership, communication, strategy, espoused values and taken-for-granted assumptions. According to Tierney (1988), these are essential dimensions to explicate cultures of universities or colleges.

The study took Mekelle University (MU) as a case. MU is one of the biggest public universities in Ethiopia. It has seven colleges and 11 institutes. Since its establishment, it has proved to be among the fastest-growing universities in Ethiopia. Owing to the unrelenting demands from stakeholders and its ambition to become one of the best universities in Africa by 2025, the university has been experiencing comprehensive changes in the past many years (Mehari, 2016). Its ultimate goal is to pursue standards of excellence in teaching, research and community service for the betterment of society (www.mu.edu.et). Therefore, one can argue that the success and failure of the mentioned vision and mission of the university are determined by the values and behaviours that guide its general practices, things valued in the organisation, employees' norms, assumptions and actions – which is called OC. As a key factor that influences the daily routines of its employees, OC can define the ways how to realise MU's overall vision, goals and strategies. However, considering the poor research culture of Ethiopian public universities in general (Abera, 2018; Tamrat, 2019; Woldegiyorgis, 2019) and MU, in particular (Sahle, 2009; Weldemichael, 2014), it is imperative to focus on the role of OC on its research activities. As a corollary, exploring the issue from the perspective of individuals is essential because OC is a great tapestry (Kuh & Whitt, 1988) that shapes the beliefs and actions of its faculty members, which in turn influences the overall performance of the university.

5.2 Statement of the problem and research questions

As Teferra and Greijn aver, "[r]esearch is often the weakest and most neglected component of higher education in Africa" (2010, p. 6; Gordon, 2014). Academics' research productivity in

Africa is significantly lower than the world average (Kpolovie & Dorgu, 2019; Njuguna & Itegi, 2013). The Ethiopian higher education system is also characterised by poor research performance even by African standards (Boateng, 2020; Woldegiyorgis, 2019). Research participation of faculty members in public universities is insufficient (Sahle, 2009; Woldegiyorgis, 2019). Academic publishing in even leading public universities (e.g., MU) is considered a subsidiary activity, and therefore research is given "marginal attention" (Abera, 2018, p. 96). People attribute the problem mainly to poor funding, insufficient research skills, and lack of clear research priorities and agenda (Weldemichael, 2014; Woldegiyorgis, 2019; Yallew, 2020; Zeleke & Beyene, 2015). However, notwithstanding scholars believe that culture is crucial to holistically (combining cognitive/agentic and institutional factors) explain such an institutional problem, a thorough examination into researches done in the Ethiopian context show that OC is rarely mentioned as a decisive organisational factor vis-à-vis research performance. Hence, it must accord attention. Based on the core cultural dimensions – social and physical environment, mission, leadership, forms of communication and strategy/decision-making – this qualitative exploratory single-case study, thus, aims to analyse values and taken-for-granted assumptions of MU's faculty members about the role of OC in their research performance.

To explore the issues described above, the study poses the following research questions:
RQ1: What is the OC in Mekelle University?

RQ2: How do faculty members describe the role of subcultures in their research performance?

RQ3: How do faculty members of Mekelle University perceive the role of OC (i.e. working environment, decision-making and leadership, communication, mission, and organisational aspirations and employees' assumptions) in their research performance?

5.3 Theoretical framework

The study was guided by a synthesis of two OC frameworks. The first one is William Tierney's framework to study OC. The framework is composed of six cultural concepts or dimensions.

(1) Environment: it is about how an organisation and its members define the organisational environment. This dimension focusses on the attitudes of employees towards their organisational environment (Bess & Dee, 2008; Tierney, 1988; Tierney & Lanford, 2018).

(2) Mission: according to Tierney, asking how the mission statement of the university is defined is vital to investigate how the university articulated its mission (Bess & Dee, 2008).

(3) Socialisation: here the dominant question is; how do newcomers learn their roles in the organisation? This inquiry is crucial to understand what new members should do to be successful in the organisation (Tierney, 1988).

(4) Information: the focus here is on issues of what constitutes information, who produces and holds it (Bess & Dee, 2008; Tierney, 1988).

(5) Strategy: refers to the decision-making process. It also questions; who are the main actors and how decisions are arrived at?

(6) Leadership: the core questions in this dimension are: who are the leaders? What do organisational members expect from these leaders (Tierney, 1988)?

The second one is Edgar Schein's OC model. According to Schein, culture can be studied at three levels. The first level is artifacts. Artifacts refer to the visible aspects of an organisation. The second cultural level is espoused values which refer to shared values of organisational members (Bess & Dee, 2008; Schein, 2004). The third cultural level of Schein's model consists of underlying assumptions. This level refers to the unconscious, taken-for-granted assumptions, beliefs, perceptions, thoughts, and feelings (Schein, 2004). So, *why two theories?* According to Kuh and Whitt (1988, p. 56), exploring a culture of an organised setting can be likened to peeling an onion. Thus, the three levels of culture devised by Schein helped to work through the different layers of culture guided by the specific cultural dimensions of Tierney.

5.4 Research methodology

5.4.1 Methodological choice

Given that the study aims to explore the perceptions of faculty members towards the role of OC in their research performance, a qualitative approach was imperative to analyse the issue thoroughly. Qualitative inquiry is pertinent to understand "the motivations that lie behind human behaviour" (della Porta & Keating, 2008, p. 26). Hence, this methodology helped to learn "the meaning that the study participants hold about the problem or issue" (Creswell, 2009, p. 175) as closely as possible. It was vital to gain a 'thick' description of the respondents' perspectives (Bess & Dee, 2008; Geertz, 1973).

5.4.2 Research strategy

As Kuh and Whitt describe, due to "the nature of culture (complex, mutually shaping, holistic, continually evolving, essentially tacit)", methods of social science research that rely on logical positivism would not describe "the multiple, overlapping layers of institutional culture" (1988, p. 116-117; see also Geertz, 1973). Thus, concerning paradigm, this study is mainly positioned to the social constructionist perspective. However, since the study focusses on the views of individuals, this perspective is supported with (social) constructivism – which "focusses on meaning making and the constructing of the social and psychological worlds through individual, cognitive processes" (Young & Collin, 2004, p. 375). Like social constructionism, social constructivism believes that knowledge and truth are outcomes of human interaction or developed out of individuals' interactions with each other (Taylor, 2018). In short, it believes that the individual mind constructions of reality are derived from social relationships. This notion is also associated with the essence of social constructionism (Young & Collin, 2004).

5.4.3 Research design

Because it emphasises participants' experience (Simons, 2014) and contextual conditions (Yin, 2003), the study used a qualitative case study design. Furthermore, the study focuses on a single-case design for the following reasons. First, because culture is context-bound, to generalize within the case rather than across cases is the essential task (Geertz, 1973; Kuh & Whitt, 1988; Meek, 1988). Second, due to the isomorphic nature of Ethiopian public

universities, MU can represent the cases in other public universities (i.e., it can serve as a typical case) (Yin, 2003). Third, in terms of standpoint, this case study research falls within a constructivist-interpretivist framework (Simons, 2014). According to Simons, such perspective of a case study would help understand how a researcher and his/her respondents perceive and interpret the issue under investigation.

Regarding the unit or units of analysis to be covered. As is the case for multiple-case design, within a single-case design there are two classifications: single-holistic and single-embedded case designs (Yin, 2003). Yin states that "if the case study examined only the [overall] nature of an organization", it means the study used a single-holistic case design (2003, p. 43). However, as Mehari (2016) defines, when a single-case design has both the unit of analysis as a single entity and the subunits that comprise it, it is called a single-embedded case design. Hence, because this study focuses on the role of both the OC as a whole (i.e. MU as an entity) and disciplinary differences as subunits (i.e. the selected academic units that comprise the entity) on the research performance of faculties in the case university, it adopted a single-embedded case study design.

5.4.4 Research setting and case selection

MU is the (institutional or) research setting. It is purposively selected because the student-researcher has a good knowledge of the context as a student and teacher. According to Yin (2014), in-depth knowledge of the setting is a prerequisite for a case study method. MU is located in Mekelle, the capital city of Tigray regional state. It has seven colleges, namely, Dryland Agriculture and Natural Resources, Natural and Computational Sciences, Law and Governance, Social Sciences and Languages, Business and Economics, Health Sciences, and Veterinary Medicine. The vastness of the university forced the study to focus on three colleges to select respondents. These are, College of Social Sciences and Languages (CSSL), College of Health Sciences (CHS), and College of Natural and Computational Sciences (CNCS). They were purposively selected for the diversity of disciplines and faculty composition.

5.4.5 Study participants and data collection

From the three colleges, the study selected 18 participants from the different groups of

respondents: experienced researchers/faculties, junior researchers, deans, and research and postgraduate coordinators. The study focuses only on fulltime Ethiopian academic staff. The participants were purposefully chosen because in a qualitative study what matters most is not the number of samples; but which informants are sampled (Sim et al., 2018) to get the relevant data for the study. The study used individual interviews and document analysis to gather the necessary data.

5.4.6 Data analysis

Primarily, the data was coded as follows: listening to the recorded interviews repeatedly; transcribing the interviews; reviewing the transcripts line-by-line; listing concepts and categories; categorising or coding data into themes and descriptions; interrelating themes; and validating the accuracy of data. Then, the crude data was organised under appropriate themes. Finally, the study synthesised the evidence and present the result(s) in a narrative form thematically based on the patterns of the data. The presentation is illustrated with pertinent quotations from the individual interviews and documents.

5.5 Key findings

The key findings can be summarized as follows.

The organisational culture: First, because faculty members have a vague impression about the dominant culture or organisational philosophy that serves as a reference point for their actions, it is difficult for them to predict their roles in the long run and to develop long-range research plans. Since they cannot adjust their behaviour to a particular OC, their research performance abnormally fluctuates according to the changing situations and haphazardly set research agendas. Most importantly, it pushed them to rely on informal ways of practice. However, it is vital to note that regardless of no single unifying OC that can guide the overall activities of the university, it is undeniable that subunits in an organisation have common elements peculiar to the general context (Cameron & Quinn, 2006). Therefore, one can surmise that the research performance of faculties is under the auspice of two equally important forces – the general OC and (disciplinary) subcultures.

The role of organisational culture on research performance: Second, the overall

professional emphasis of faculty members towards teaching indicates that, as an institution, the values, goals and aspirations of research do not, practically, get due attention as it is accorded to the values and norms of teaching and other duties. From the individuals' perspective, this means that the beliefs and values systems of faculty members give much worth to successful teaching as their core professional duty. Since research practices and the culture of faculty members can be derived from the history of the university, this is not indeed unanticipated because MU is a teaching-oriented university – the teaching staff are expected to allocate 75% of their time for teaching. Therefore, the emphasis on teaching over research can, partly, be attributed to its history. Third, the mission, vision, strategies and organisational policies, in principle, aspire for a strong research engagement of the faculty. Paradoxically, the research culture, generally, is weak. It, partly, implies that beyond being used for rhetorical consumption, the strategies and aims specified in the mission statement, often, failed to materialise on the ground.

Fourth, a university (like MU) that does not adequately help fledgling faculty member establish themselves within their profession, cannot demonstrate a strong research culture. Most importantly, it leaves junior faculty members inadequately prepared to shoulder responsibilities amidst the designation of the university to a research-intensive level. Fifth, the perception of faculty members towards their research practices relies on the amount and type of information (e.g., policy, directive, procedural and conceptual information) they can access. As such, lack of frequent communication and effective interaction among faculty members are obstacles in creating a distinct research culture based on shared assumptions and singularity of purpose about the quality and values of research. Therefore, because culture is inseparably intertwined with communication, lack of effective communication signifies weak OC.

Sixth, the complexity of administrative hierarchy and the presence of many control mechanisms designate the assumptions of the university towards the *nature of human nature* (Schein, 2004) – enhancing effectiveness by controlling human action. By centralising decisions on decisive research issues (e.g., developing research themes and budgeting), the government (which administers the university) at large and the university, in particular, focus on controlling human actions to achieve the organisational goals. Thus, it is a restraint on the freedom of inquiry and decision-making or, generally, on academic self-governance. It might,

in turn, have created a gap in the research culture of the university through '*peripheralization*' (see also Tessema, 2009) – i.e., faculty members, often, under-credited in the decision-making processes of research issues. Therefore, the insufficient freedom to decide on research interests could have adverse roles on the intrinsic research motivation and psychological empowerment of faculty members.

Seventh, although faculty members are pressed to extensively engage in research, the research culture at MU is not supportive, however. Most importantly, the perception of the faculty members towards the research support systems of the university is despondent. Hence, since "perceived institutional and departmental support for research is seen as the most important enablers to research productivity" (Kelly & Warmbrod, 1986, as Quoted in Kotrlik et al., 2002, p. 8), it can have substantial roles on the research engagement and performance of the faculty. Also, the allegedly prejudiced view from the leadership on the perceived importance of certain subject areas might have decisive roles on the extent and nature of research supports. For example, Becher writes that scholarly works in disciplines or subjects grouped under the soft-pure category often viewed by the outside world "as neither needing nor deserving any significant financial support" (1994, p. 155). Similarly, it is believed that people in the top leadership position of the university show favouritism towards disciplines in STEM fields. Therefore, they act as gatekeepers on issues to be researched and the types of disciplines that deserve attention.

Eighth, whenever the formal or bureaucratic principles and communication mechanisms are perceived as dysfunctional, faculty members have tacitly agreed upon espoused values to follow informal methods of achieving their goals. When these informal mechanisms work sustainably, faculty members consider them as taken-for-granted assumptions or ways of acting. Accordingly, this implies that, on the one hand, when informal ways of acting are shared and mutually reinforced to guide the actions of faculty members, there is a high probability that irregular organisational context would emerge. On the other hand, the faculty members' approach to 'doing things differently' from the university's espoused justifications (or taken-for-granted academic practices) is a way of pinpointing its weaknesses and issues that need change. In a nutshell, the espoused values of the faculty members indicate not only what is *working* and what is not, but also what is *possible* according to their context. It entails that the university should ensure the congruence between its research strategies and the

espoused values held by the faculty members. When there is divergence, faculty members switch to (informal) paths agreed upon among themselves. Therefore, inconsistencies between the organisational espoused values and assumptions of the faculty cause problems in achieving the long-sought goals of the university.

In general, without a research-friendly university culture, the capabilities and energy of, even, talented faculty members will be drained. The beliefs, assumptions and behaviours of faculty members emanate from what they observe and learn within the organisational context. Thus, OC has pivotal roles in individuals' behaviour or actions in research (Yang, 2017). Therefore, the university is expected to create and nurture a distinctive research culture that augments (intrinsic and extrinsic) research capabilities of faculty members. By distinctive research culture, the study refers to an organisational context "that encourages and equips people to be curious about nature and society and to develop an interest in the pursuit of knowledge and ideas" (Sawyerr, 2004, p. 219). It is not about, merely, having a group of scholars who can conduct researches (Hanover Research, 2014). It is about creating a culture that embraces research as the main task of the faculty. Partly, there are prospects that the university is trying to make the structure and the general context suitable for research engagement. For example, the university is planning to include other pertinent stakeholders (e.g., directorates) within the existing structure of research and community service engagement. It is an important institutional change. Because: first, it will create an inclusive and participatory process of research activities. Second, besides the effort to change the values, beliefs and attitudes of faculty members, changing systems and structures is pivotal to change the research culture of the university. However, the overall impression is that there is a long way to go before research practice at MU becomes the culture of the scholarship.

5.6 Suggestion for further study

This study is conducted to understand the perceptions of faculty members towards the role of OC in their research performance. The study results indicated that although faculty members could not remark one form of culture they use as a point of departure for their research activities, they believe that the overall OC (of the university) and its constituent parts have pivotal roles in their research practices. However, as this study is purely qualitative, it is difficult to determine the causal relationship between OC and the research performance of

faculty members. Thus, the application of qualitative or mixed-method analysis would help to show the connections between different variables. Most importantly, the study employed OC models that are often used to describe an organisation's overall culture and nature. Therefore, further empirical and theoretical studies are needed to concretely conceptualise such OC models (e.g., Schein's three levels of culture) to scrutinise the impact of OC on research practices and other functions of universities (as organisations).

5.7 Acknowledgements

I would like to gratefully thank my supervisor Yohannes H. Mehari (PhD) for his guidance. I would also like to thank all Higher Education Group (HEG) staff at Danube University, Krems and Tampere University. My special thanks also goes to all participants of the study.

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6 Student Experience and Career Expectations: Pakistani students in Hungary during COVID-19 Pandemic

Fatema Irfan

6.1 Background statement

Internationalisation is described as the movement of human capital for knowledge exchange, which has been prevalent since the Middle Ages, when the student pilgrims went in search of knowledge to renowned cities and universities (Adriansen, 2016). Further, in modern day because of the advent of technology and faster means of travel internationalisation has spread rapidly and across the globe (Chinnammai, 2006). Wherein, approximately 5.5 million students per year travel for studying in countries other than their own home countries, the United States of America is often a top destination for majority of the nationalities followed by United Kingdom and Australia. China, with its largest population in the world, sends the maximum number of students abroad, approximately one million (UNESCO, 2021). Student experience is comparatively a new concept which has gained popularity because of the massification of higher education wherein students are now treated as consumers and customer satisfaction matters (Brown et al, 2008). Some of the popular student surveys include the National Student Survey (NSS) from UK, however, it is often criticised that it might not produce an accurate picture of the experiences and might be influenced by external aspects (Sabri, 2011; Langan & Harris, 2019).

Furthermore, human capital and social capital theorists claim that the richer the invested capital, the more economic gains an individual will have (Gillies, 2017). Therefore, in light of the increased mobility, it has been observed that career aspects have been influenced as well (Waibel et al., 2017). Multinational companies now prefer graduates who have an international experience as this allows them to have multiple soft skills, relevant for today's highly dynamic corporate world (Schugurensky & Silver, 2013).

Pakistan is a developing country in the Indian subcontinent that shares borders with India, Iran, Afghanistan and China. The nation contributes to the student mobility by sending

students abroad and often students choose to go abroad to study to more developed countries which are free form the educational problems that Pakistan is plagued with. For instance, lack of funds is often cited as the primary drawback however, critical analysis shows that it is also a matter of policy implementation, political instability and poverty (Hunter, 2020; Hoodbhoy, 2009; Majoka & Khan, 2017).

On the other hand, Hungary is a nation within the European Union which is a landlocked country between Austria, Romania, Slovakia, Ukraine, Croatia, Serbia and Slovenia. Similar to how education has been stressed throughout the historical events of Pakistan Hungary too, stresses the importance of education and thus has seen many Noble prize winners especially in the fields of natural science (Berend, 2020). The nation has begun a scholarship programme in 2013 named the Stipendium Hungaricum which allows students to study within any the participating Hungarian Universities providing a fixed stipend and accommodation allowance. Since 2015 Pakistan's, HEC Ministry of Education has been short listing applications and works in coordination with the Tempus Foundation in Hungary to send bright applicants (Hangyál & Kasza, 2018; Stipendium Hungaricum, 2020).

As of 11th March 2020, Coronavirus has been declared a pandemic, because of the massive spread of the disease, countries have had to close borders completely to safeguard their people. This has directly influenced the HE arena, wherein, students have to have shifted to digital classes overnight (CDC, 2021; Smalley, 2021).

6.2 Research Gap

As highlighted in the background, various topics have been discussed; internationalisation, mobility of students, social and human capital theories, student experience, career expectations, Pakistani and Hungarian education system and a pandemic. All of these have several existing literatures on them, as can be seen in the literature review from chapter two to chapter six, however, no research exists which discusses the student experience and career expectations of Pakistani students in Hungary. Therefore, to fill this gap, or at least begin the filling process, this research has been undertaken

6.3 Significance of the study

This research is unique, because there have been studies that measures the student experience or other such mixed-method data of Pakistani students going to more popular destinations such as United States of America (Hamrick, 2007), however, such research is limited, and especially is unavailable in the European context. While it is acknowledged that Pakistani international students are few, this research can aid the Ministry of Education of Pakistan to develop their policies and improve the student experiences back home while learning from international experiences of students. Further, this research can aid in guiding prospective students, specifically Pakistani, who wish to abroad for an education and thus enjoy the career mobility benefits.

6.4 Research problems and questions

1) Hungary as a study destination for Pakistani students.

    a) What role do past experiences (educational and work) play?
    b) What role does family/ social capital have?
    c) How do finances matter?
    d) Do demographics (age, gender) play a role in gained experience?

2) Pakistani students studying in Hungary.

    a) What role did faculty play in student experience?
    b) What role did support services, before and during, the study tenure play?

3) After studying in Hungary, career expectations.

    a) Do financial matters matter?
    b) Is social capital a strong influencer?
    c) Does student experience impact career expectations?

4) Exploring the impact of Covid-19 on students' experience and career expectations.

6.5 Research Methodology

For this research, a mixed method study was conducted so that the I can delve deeper in the experiences of Pakistani students in Hungary and gain a better understanding of career expectations (Creswell & Creswell, 2017). The pragmatism research paradigm is used to justify the selection of mixed-method design and collaborate the philosophy of the evaluation of student-experience in an international, social setting. Pragmatism is the absence of a clear and precise constructivist or positivist approach to research, pragmatist researchers advocate a mixture of the paradigms while advocating social justice (Kaushik & Walsh, 2019). Although this research does not explicitly aim to explore social justice constructs, the qualitative component is of semi-structured interviews, wherein, some underlying social justice components have been found.

A descriptive, explanatory sequential mixed method was used whereby a quantitative study on the student experience and employability was conducted which was analysed descriptively. After which a qualitative study was conducted to gain further insight in the student experience of the Pakistani students in Hungary (Creswell & Creswell, 2017; Creswell, 2014). Initially, social media, primarily Facebook was used to reach the participants for this research. Initially I thought that only posting the survey link on Facebook groups, would elicit sufficient results. My search criteria for choosing groups was based on keywords, Hungary and Pakistani. I chose these groups since they had a massive number of members and I hypothesized that it would increase my outreach. However, that did not produce enough responses, 37 answers out of which only 8 were viable answers which fit the research criteria.

However, only one university, Budapest University of Technology and Economics sent my email to the 108 Pakistani students of their institutions, but this was through the official Neptun email address and often students do not check these inboxes. Although Corvinus University of Budapest officials could not forward my email, they did provide me with number of Pakistani students and contact addresses for the Pakistani Embassy in Hungary. By contacting them I got access to the WhatsApp group of the Pakistani consulate in Budapest. From this means of contacting potential participants I managed to get 11 viable responses. Thus, out of 53 responses 19 were viable for use within the research. For the qualitative interviews, those participants that agreed to be contacted further for interviews, in the last question of the quantitative survey were sent emails. An addition form was sent which asked

for basic demographics like name and email address so that I could match the responses of the survey with the interviewee, off them only 5 responded.

Surveys were developed using inspiration from the EUROSTUDENT IV surveys, to evaluate student experience and mobility. To evaluate career expectations, Hirschi et al.'s (2018) Career Resource Questionnaire was utilised, wherein items with the highest validity scores and most relevance for this research, pertaining to the four key different topics; knowledge skills, environment, motivation, activities was incorporated within the survey form. Although this questionnaire has been only used quantitatively (Haenggli & Hirschi, 2020), this study aims to provide a starting point for measuring potential career trajectories, using the questionnaire to provide for descriptive statistics.

The final questionnaire used for this research was designed in Microsoft Forms in compliance with the EU GDPR, the questionnaire and responses are saved in the One Drive of the ELTE account. The questionnaire was then circulated among the Facebook groups as mentioned above, using the techniques in the research of Kosinski et al. (2015).

Semi-structured interviews were developed based on the research questions. The interviews were conducted with the 5 participants that replied to my email and who had filled the questionnaire survey. Due to the pandemic the interviews were conducted via Zoom at a time that was convenient to both the researcher and interviewee, each interview was approximately 30 minutes long. After the interview, the interviews were transcribed using the in-built feature in Microsoft Word, obviously it did not pick all the accents and had to be proof-read against the audio for errors and corrections. After the transcriptions of the interviews Atlas.ti, a qualitative coding software provided by Tampere University, was used to discover the recurring codes and themes within the five interviews. After that an Excel sheet was formulated where the quotes along with the themes were put in a cross tabular format for easy analysis.

6.6 Research Findings/ Results

This section will combine the results with the literature discussed in chapters two to six, it follows the order of before going abroad, abroad and after going abroad the student

experience and career expectations and their influences of Pakistani students in Hungary all laced with the undercurrent of the Pandemic.

6.6.1 Before traveling to Hungary

Pakistan is a developing country in the Indian subcontinent but despite its rich history and the importance it has stressed on education since the Indus Valley Civilization. Modern-day Pakistan has the lowest budget allocated for education within the entire region. This is often cited as the biggest cause for the poor education system nationwide. However, as Hoodbhoy (2009; 2020) pointed out that the colonial mindset that the country has inherited from the British Raj has further crippled the society causing a language apartheid. Wherein, the medium of instruction is not just the language a student is studying in but rather a class symbol (Shamim, 2017). English is considered to be an indicator of literacy and elitism, as can be seen from AM's quote, "…they have PhD degrees, but their English is not understandable..."

Furthermore, within Pakistan there are several influences that cause political instability. Such as the over-bearing presence of the army in civilian roles as can be seen from HA's comment of how not having the option of top positions, affects his decision on wanting to return to Pakistan, "…My growth is very limited because the higher places are going to be occupied by those people (army)...." Resulting from this is the brain-drain phenomena where an increasing number of skilled and professional workers are continuing to leave Pakistan permanently to make a home for themselves elsewhere and have equal opportunities for growth (Robertson, 2006; Rizvi, 2006). However, there are individuals who want to make a difference within Pakistan but realise that a foreign education is more valued than a locally gained knowledge within the job market. For instance, AMS wants to be an academician and conduct research within the arena of counterterrorism, but he is aware that if he went back to Pakistan without a PhD his job prospects would be extremely limited. On the other hand, the strength of the army is showcased in the excellence that the schools under military supervision are run with. As MN, who studied at a cadet college recollects his experience saying, "cadet college was a nightmare…there were pros and cons...it was cadet college that groomed me very well." However, these schools are an exception that are often considered at par with the private education providers within the country. Majority of the public schools' quality has steadily

deteriorated as the private schools have gained popularity and become a symbol of elitism and quality. Hoodbhoy (2020), criticising the public schools says how students although study the same syllabus, content-wise, as those in the O'Level and A'Level stream, the methodology of teaching is different and not abreast with modern pedagogical strategies; public schools still asses students on their capabilities of rote learning instead of enabling them to become critical thinkers.

There are clear, defined gender discriminative roles. Some are explicit while others are often implicit and not considered as discriminative roles by majority of the population (Ali et al., 2011). For instance, as per AMS, his parents are non-discriminatory and have allowed his sisters to go to the best universities as well. While, MN did concede to the fact that if he was a girl, his parents would not have let him go abroad for educational purposes. HS sums up the societal and cultural structure of Pakistan for women, when she said, "…as a girl because you always have the weight of everybody back home you carry those expectations all the time..."

6.6.2 Studying Abroad

Following these issues within the Pakistani societal and educational structure, students from the fifth largest youth country, strive to study at international destinations. The nation contributed 58,821 students to internationally mobile students, which accounts to a measly 1.1% of the entire student population (UNESCO, 2021), therefore, accepting the narrative that only the elite can dream of going abroad for higher education. However, students from underprivileged backgrounds, can apply for scholarships that are often in partnership with the national ministry of education or other such organisations. Although, scholarships exist to reduce the disparity between various disadvantaged and privileged groups of people, it has been observed, that political alliances between nations and personal intellectual capabilities along with a push from the educational background attained, matters (Saeed et al., 2015). For instance, in the qualitative interviews obtained, none of the five participants had received basic education from a public school, they had all attended private schools or army monitored and run schools, this in turn allowed them to study at private universities. The income disparity is, therefore, clear in the profile of students who travel abroad for higher education.

According to Iloh Model of College-Going Decisions and Trajectories (2018), the three

dimensions that play a major role to help decide students' which college to go to are time, information and opportunity. This model can be understood in regard to the participants who travelled to Hungary for higher education.

Pakistan is a collectivist country wherein; family plays a major role in helping students decide in their trajectory. AM credits his father for his education by saying, "so I think the reason behind my studying is the factor that affected me most is the study background of my father…is the motivation behind studying this much." While on the other hand, MN's parents were uneducated and felt the need to educate their children so that they could have a better future, in the case of HS, overt motivation was available, where explicit encouragement or guidance was not provided but if an opportunity came about, it was encouraged and supported,

However, it was interesting to note that Hungary, despite its academic lauds and emphasis on education through free secondary education (Berend, 2020), was not the first-choice country for four out of the five participants. Furthermore, one of the greatest motivations to study in Hungary was the aspect of comparatively cheaper yet a European education, this is one of the major pull factors for Hungary (Mazzarol & Soutar, 2002). While AMS, utilised educational agents to obtain an admission in the university at Hungary, he wished to go to either France or Germany but instead the agent applied to a Hungarian university that accepted him. AMS is one of the many who frequent the doors of agents to earn an admission abroad, this too is not free from the practice of corruption.

Majority of the internationalisation literature that focuses on mobility of students recognises the difficulties that international students face when moving from one country to another. As was observed, Hungarian universities along with Tempus Foundation have been doing a great job in being inclusive and accommodating the in-coming students. For instance, an aggregate 63.2% participants were satisfied and above with their international offices, this is great, however, culturally and socially, students felt they were part of the society at neutral levels only. This is in line with Wu et al. (2015) and Patridge et al. (2012), who claim that although universities are doing plenty of things to accommodate international students, the local government needs to be more pro-active to help make international students feel integrated. Further, the difference in forms of socialising renders it difficult for active mingling to take

place. Feelings like these from international students results in feelings of alienation as per Sherry et al. (2009). This is in accordance with an average rating of 3.11 on a scale of 5, of how much the participants understood the local culture however, the understanding of the same was below average at 2.79. Often students feel that they have gotten a cultural shock when they travel abroad for studies especially in the movement from East to West or vice versa.

Furthermore, the Coronavirus pandemic of 2020 greatly impacted and affected the fulfilment levels for the quality of education that students received (UN, 2020) as AMS pointed out, ““…because they were exhausted like they were delivering a lot of lectures in a day and they were just talking, talking, talking…that wasn't much education, educational atmosphere, online classes…” This teaching technique is demonstrative of a lack of digital pedagogical tools that many professors during the COVID-19 days were lacking and found it overwhelming to retrain at such short notices (Toquero, 2020; Aristovnik et al., 2020). MN was also dissatisfied because of the online teaching methodology saying that education was, being bored in front of a screen all the time. This too signals towards ineffective digital pedagogies employed by the professors.

Pakistan is a developing country which has several issues within its educational system such as lack of funds, weak policy implementation, nepotism and a conventional lecture method of teaching (Hoodbhoy, 2009). Therefore, when students compared Hungarian education, with its modern learning and teaching techniques they gave the latter educational system out of 10 points, 8. However, when the system was compared to other European countries, primarily, Germany then the ratings halved. Studying in Hungary is considered to be an easy gateway to Europe and a western education, a coveted qualification for all within the country.

6.6.3 After Studies

While the primary focus of this research was measuring and understanding student experience of Pakistani students in Hungary, career expectations and how they are influenced by the student experience was touched upon. Social and human capital theorists claim that the more capital an individual has, the more economic returns one can see, thus in this research career expectations can be viewed in terms of the capital invested. HCT states that an educational

background matters and the higher the level attained the richer the capital (Gilles, 2017; Waibel et al., 2017). This can be understood from AMS's comment stating that he will not return to Pakistan till he gets a doctoral degree because otherwise his expected career would be comparatively low paid. This further demonstrates the career clarity that majority of the respondents, 63%, replied with agree and above to understanding what they want to achieve from their career in the quantitative survey. Moreover, in accordance with HA thinking that his studies play an integral part in deciding his career, since he has already switched from physics to mechanical engineering and further aims to switch to the field of bio-medical, majority of the quantitative participants, 42.1% agreed that studies play an integral part in career development and expected trajectory.

The pandemic of 2020 has greatly affected the student experience of the international students and in turn the career expectations as well. To begin with, it has provided students with great levels of uncertainty regarding the future, further it has influenced career trajectories greatly. HA confirmed with the sentiments and explained, "will also consider working over here for a year at least. Maybe it depends on the situation over there."

Qualitatively, the participants voiced various potential career expectations following their study program, however, all subject to availability of finances, health situations and opportunities, ranging from furthering their academic career to looking for internships within the European Union and looking for permanent jobs within their field of education. Germany was a favourite choice for most who wanted to pursue their academics and was a first choice for many before Budapest as well. This can be explained by the plentiful scholarships available in Germany. However, it was interesting to note that quantitatively majority of the participants, 53% wanted to continue living in Europe and working there, however, there were 21% people who wanted to go back to Pakistan to find work, this can be explained by the patriotic spirits of the students such as MN who wants to make a difference in the policy making of the country.

Social capital theorists believe that stronger the professional networks that may exist, the greater the economic returns a participant could get. AM when questioned about his existing social capital he said, "It will help me because references work a lot…" However, MN had a different response which made him sceptical, "I don't really have any sort of connection.

Without connections, in case of Pakistan we can say that (it is difficult) but hope for the best." This highlights the value of social capital in the context of Pakistan and the important role it plays in potential career trajectory. Employability of the students is greatly impacted by the mobility in their education, as international companies are looking to recruit employees with an international and diverse background (Schugurensky & Silver, 2013).

6.7 Conclusion

To conclude, this master thesis employs descriptive, exploratory, sequential, mixed method research design to elaborate and evaluate the student experience and career expectations of Pakistani students in Hungary. However, the research was heavily impacted by the pandemic of Coronavirus, resulting in compromised student experience and uncertain future trajectories of the participants. This thesis explored the challenges that international students' Pakistani students face when traveling abroad, to Hungary for an education. There were several push-pull factors that were identified such as economical and university support within Hungary. However, the biggest push factor identified for the students was the poor education system within Pakistan, which is a result of lack of funds and poor policy implementation primarily.

Using the social and human capital theories which argue that increased educational investment resulted in increased economic benefits, career expectations of students was explored. However, although majority of the participants were interested in staying within Europe, there were few who believed that they wanted to bring about a change in Pakistan by going back, but this was only after attaining a certain academic position.

6.8 Recommendations

Considering the findings and results, I suggest the following.

- To conduct this study with a bigger sample size to get a more accurate and scientific picture of the student expectations and career expectations of Pakistani students in Hungary.

- To use this research to as a guiding document for understanding the background, and

future expectations of Pakistani students who come to Hungary

- To expand this research methodology to other countries wherein, Pakistani nationals are a minority but still travel for international education.

- This research can be used as a comprehensive document to understand; internationalisation, student mobility, student experience, Pakistani education background and career expectations.

6.9 Limitations of the study

This thesis is not free from potential limitations, the limitation of the methodology is discussed in the results section but in addition to that the following are the major drawbacks to this study.

- The sample size of the population was too small and needs to be bigger for more accurate results.

- The pandemic impacted the thesis greatly, this needs to be replicated in a time without the border restrictions, thus allowing for on-site data collection methods.

6.10 Acknowledgements

This thesis is dedicated to all those who played a role in it; my supervisor Erika, my MARIHE professors, my MARIHE colleagues, especially, Cuan, Kaushal and Nata. But most importantly, this is for my family; parents, brothers, Hasnain (husband) and Hamza (son).

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7 Digitalization in Ethiopian Higher Education Institutions: The case of Mekelle University

Tsegay Girmay Hagos

7.1 Abstract

Digitalisation is revolutionising most functions and services of higher education institutions. The process of coordinating the implementation of digitalisation with an intention to establish an effective educational workspace ready to serve its missions rests on the responsibility of educational leaders. However, there is a concern about how the leadership can adopt leadership strategies appropriate to balance the existing institutional features and emerging demands of digitalisation in the higher education environment. Therefore, this study aimed to explore the leadership strategy in implementing digitalisation in higher education institutions. The ICT implementation analysis framework guided the study to understand actual practices and suggest optimisation mechanisms. Qualitative data using a semi-structured interview and document analysis were used to gathered relevant evidence. Hence, the findings show that the leadership's actual strategy focuses on deploying digital resources targeting to establish a digital infrastructure. So far, an insignificant number of digitalisation services in academic and research have been implemented. Meantime, the leadership faces challenges of uncomprehensive planning, monitoring and evaluation instruments, and support and training specifically in digitalising academic and research endeavours of the university. Accordingly, participants and relevant literature suggest optimising the leadership of digitalisation in alignment with the change management models and strategic management process, focusing on capacity building to equip the leadership with crucial e-leadership skills. Hence, this study has suggested a model optimise a strategic digitalisation leadership for HIEs in Ethiopian universities and a more context-oriented mechanism to the case university.

Keywords: leadership and higher education institution, digitalisation, implementation analysis, leadership

8 Finland as the Study Abroad Destination for Iranian Students: Pushes and Pulls

Gholemreza Jafari Kandonvan

8.1 Background

The recruitment of internationally mobile students has its roots in the internationalization of higher education. Transformation of internationalization into a pro-active strategic issue (De Wit, 2011), competition, and commercialization (Knight & de Wit, 2018) under the influence of globalization has directed its primary motivation towards generating revenue for universities (Altbach & Knight, 2007). According to Knight and De Wit (2018), the orientation towards increasing commodification of higher education (HE) is the common notion of internationalization among institutions throughout the world and they see the students as a major source of revenue for their institutions (Altbach, 2004). The inclusion of educational services in the General Agreement on Trade in Services (GATS) by the World Trade Organization (WTO, n.d.) is a seal of approval for the increasing tendency to regard education as a tradable service. Consumption abroad or student mobility (Altbach & Knight, 2007), is one of the four modes drawn by GATS for the trade of educational services.

By providing mutual benefits for universities and students and achieving a considerable increase in the population of international students from 2.2 to 5.6 million between 1998 and 2018 (OECD, 2020), student mobility has been the central focus of internationalization. It has turned into a big profitable business of international student recruitment (Knight, 2012) with an estimated economic impact of $300 billion in 2016 (Choudaha, 2019). The market had already been monopolized by English-speaking countries; however, in recent years, the non-anglophone countries have attempted to get into the market. Finnish education export strategy developed by the Finnish Ministry of Education and Culture (FMEC) is an attempt of this kind.

Finland's education export strategy aims to increase its proportion of education and knowledge export in relation to overall exports (FMEC, 2010), focusing explicitly on higher

education (FMEC, 2013). In 2017, after the parliament approval (HE 77/2015 vp), tuition fee policy was introduced for non-EU/EEA students and exporting HE through tuition-fee-based programs started officially. As a new initiative, Finnish education export policy and strategy received attention from researchers in the field of HE and came under scrutiny and criticism.

Studies that challenge Finland's education export policies and strategies, highlight its weakness in marketing (Cai, Holtta, & Kivisto, 2012) and lack of clear and concrete visions and strategies (Cai & Kivisto, 2013). Therefore, investigating potential target markets with their special characteristics to provide structures for designing concrete marketing and branding strategies and campaigns can contribute to responding to the challenges. Iran can be considered as one of the potential lively markets.

In the higher education export market, Iran is a noteworthy importer. Iranian students usually constitute a notable proportion of the international students in host countries. In 2018, around 56,000 Iranian students were studying abroad (UIS, 2021). In the same year, Iranian students were among the common nationalities studying in Finland (Garam, 2018). They have also been among the four highest fee-paying students during the tuition fee trial period in Finland's HEIs (FMEC, 2013). Despite having such considerable potential as an education importer no specific study was found about Iranian students' motivations and decision-making process regarding studying at Finland's HEIs.

To fill the gap this study aims to identify the contributing factors involved in Iranian students' decision on leaving their home country for study in Finland's universities. To achieve the research purpose, the study attempts to answer the following question:

What factors influence Iranian students' decision to apply for tuition-fee-based degree programs in Finland's universities?

Four sub-questions were formulated to cover all aspects of the main research question:

1. What factors initiate Iranian students' decision to leave their home country to study abroad?

2. What factors influence Iranian students' decision to choose Finland as their higher education destination?

3. What factors challenge Iranian students' decision on leaving their home country to study abroad and choosing Finland as their higher education destination?

4. What mindset changes do the Iranian students experience about the contributing factors in their decision on studying in Finland after entering Finland and starting their studies?

To guide the study towards answering the research questions, a push-pull model was employed as the analytical framework. The push-pull factors have been frequently used to explain the mobility of international students. "Push factors operate within the source country and initiate a student's decision to undertake an international study. Pull factors operate within a host country to make that country relatively attractive to international students" (Mazzarol and Soutar, 2002, p. 82). Li and Bray in their research extended the push-pull model by adding reverse push-pull factors, defined as "the positive forces at home and negative forces abroad" (Li & Bray, 2007, p. 795). In other words, "the actual force of the push factors at home that push students to leave for study abroad could be counteracted by the reverse push factors that attract students back to their homeland. On the other hand, the attraction of the host country, called pull factors, may be undermined by the reverse pull factors that make the host country less attractive" (Wong et al., 2020, p. 281). Studies that have used push-pull factors for their framework can be categorized into three levels, i.e., micro, meso, and macro. The micro level deals with the students' decision-making, the meso level focuses on institutional level marketing, and the macro level is about national marketing (Chen, 2017).

This study employed Mazzarol and Soutar's (2002) model with the reverse push-pull factors added to the model by Li and Bray (2007) as the analytical framework. The reason behind this is that the focus of both the study and the model is on the micro level, i.e., the students' motivations and decision-making processes.

8.2 Methodology

This study uses a qualitative research method. The design that this research takes for its qualitative method is the case study through which focuses on the group of Iranian students who have applied for tuition-fee-based degree programs in Finnish universities. The rationale behind choosing this method and design is that although the push-pull factors have already been studied in different contexts they are new for the Iranian students studying in Finland and need to be explored. Additionally, the decision-making process, including motivating and demotivating factors, is a complex mental process that needs to be deeply studied.

The research follows a convenience sampling strategy. Participants were selected from Iranian students and graduates of bachelor's or master's degree programs, which were started from autumn 2017 onwards and delivered in English in one of Finland's universities. The reason for this selection is that the non-EU/EEA applicants, including Iranians, were subject to tuition fees for these programs. Twelve participants, including 11 master's degree program students/graduates and 1 bachelor's degree student took part in this study. They were interviewed by semi-structured interviews that were conducted online via WhatsApp and Microsoft Teams voice calling applications as the most proper and possible way during the Covid-19 situation.

To analyse the data, first, the audio records of the interviews were fully transcribed and uploaded to Atlas. ti software. In the next step, they were coded deductively through developing a provisional "start list" of codes that were driven from the conceptual framework (Miles et al., 2014, p. 81). Some inductive or data-driven codes that emerged during the interviews were also added. After the first coding cycle, the number of codes was reduced; some of the initial theory-driven provisional codes were removed since they were redundant and no information from the text could be assigned to them. Some of the overlapped codes were also combined in this stage. Then, the codes were categorized under themes.

To ensure validity and reliability, codes were double-checked with the transcripts to realize and correct any possible errors. Transcripts were also checked for any discrepancies in interviewees' descriptions of the same thing to see whether they are real discrepancies or just different viewpoints and perceptions. To better understand the slang, idioms, and proverbs throughout the interviews, they were carried out in the Persian language that was the native

language of both the interviewer and interviewees. The interviews were also recorded by voice recording applications and fully transcribed for the analysis.

To respond to the ethical concerns, the Informed Consent Form together with a Participant Information Sheet was sent to the interviewees to gain their consent. In the participant information sheet, the author's background, information about the thesis, means of communication for the interview, and the length of the interview was explained, and their anonymity was ensured to be preserved. During the interview, the interviewees' permission was first received to make the audio recording. Throughout the thesis writing the information that could be used to identify a particular participant such as the names of cities and universities and the participants' fields of study were removed from the report.

8.3 Findings

Three main push factors motivate Iranian students to leave their country for higher education. *The intention to migrate* was the main motivation for applying to study in another country, and the *Economic instability* was the second factor pushing Iranian students outside the country. A large proportion of the participants of this study believe the unpredictability of their home country's economic situation in recent years has been an important reason for deciding to leave the country in the hope of finding a better place to live. *The Desire to experience a new place and situation* had been the final push factor affecting Iranian students' decision on studying abroad.

Eight factors mainly determined Iranian students' decision about selecting Finland as their final study choice. Predictably, factors related to migration, including *living and immigration advantages of Finland*, have been raised more frequently by the interviewees than other factors due to the participants' intention to migrate. *The quality of education in Finland* was also of outstanding importance for Iranian students. *Finland's reasonable living and studying costs* were another attraction for Iranian students. Although Finland's expenses may not be lower than many other countries in general, the living expenses of students are notably lower thanks to the subsidies for accommodation, food, etc. Social costs components, including safety and low crime rate, were also mentioned as important factors by the interviewees. *Recommendations from friends and relatives* proved to have a major influence on Iranian

students. As they mostly lacked knowledge about Finland or did not have easy access to other sources of information, most interviewees had chosen Finland following their parents, friends, or relatives recommending the country. Iranian students cared about the *geographic proximity* of their higher education host to their home country since the ability to connect to their home country, especially their families, was important for them. It is not unexpected for the students who are considering the option of migration and studying abroad at the same time to pay attention to the geographic proximity. The need to maintain important relationships for Iranians has led some of them to come to Finland because of having a *social link* here. One of the interesting factors affecting Iranian students' decision about choosing Finland was the influence of *the embassy of Finland*. This may seem a little strange without knowing the process Iranian students go through when applying. They usually apply simultaneously for several universities in different countries. Therefore, they need to visit the embassies in the process of applying for education to legalize their documents. In this stage, students begin to compare the atmosphere of the embassies of different countries they are applying for and are exposed to the first impression of the country by their very first visit to the embassy. This can be a crucial stage in the process of choosing one country as the destination.

There have been two reverse push factors that discouraged Iranian students from leaving their home country for education. As mentioned before, the interviewees attached great importance to their families. Unsurprisingly, *the desire to stay with family* was the main reverse push factor that made the decision to leave Iran difficult for the students. Although most of the interviewees intended to migrate, their attachment to the family was so deep that made it hard for them to leave home even with so many economic problems. Along with missing the family, Iranian students face *losing job opportunities and networks* established over the years. It would be particularly challenging, or even sometimes impossible, to build the same network and relationships in the host country as a foreigner or newcomer.

Two reverse pull factors challenged Iranian students' decision on choosing Finland as their education host. These were *Finland's environment (dark and cold winters)*, and the language. The dark and cold winters of Finland may seem particularly intolerable for Iranian students because they come from a fairly warm country with more balanced day-night hours. However, this mindset underwent some changes after visiting Finland and being exposed to the new environment. *The Finnish language* acts as a discouraging factor in the higher education

market for Finland. Iranian students, like many other international students, prefer to study in a country in which the native language is English. This way, they do not need to worry about learning a new language, which is considered a burden for them. This is particularly important for Iranian students given that they intend to migrate to the host country, and they need to learn this language anyway.

A notable number of interviewees changed their mindsets about Finland after coming to the country and beginning their studies. They stated that what they thought about Finland's *people*, *environment*, and *education* was not so much realistic. There is a common stereotype that says it is hard to communicate with Finnish people. This mindset changed for the interviewees after they had pleasant encounters with the people of Finland. A similar mindset change happened about Finland's weather and daylight hours. What the students had imagined before arriving in Finland was much harsher than reality and they found it manageable when they were exposed to it. The students' expectations of Finland's education also did not come true. The interviewees used to think about Finland's education as the brand in the world, but after they began their studies, they found out this was about the Finnish school education system rather than higher education. There was also a positive change of mindset that happened for the students who had thought they would enter a very restrictive educational system that would create severe stress.

8.4 Recommendations

These suggestions are offered for future studies in this field based on what was experienced in this study:

- Using a quantitative study can best complement this study by providing more objective and generalizable findings.

- Conducting research on the lived experiences of Iranian students and alumni who have already looked for a job in Finland. During the interviews, it seemed that such cases had dual feelings about their pleasant experiences of the university versus unsettling experiences of the outside. This is important because this population is the potential recommenders for future potential students and can be highly influential in absorbing

students from Iran.

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9 Research-based Learning and Teaching in Higher Education: Potential for Synergy

Nato Japiashvili

9.1 Background

Research-based learning and teaching are complex concepts that connect two essential dimensions of the university – research and education. Instead of using the term education, learning and teaching help highlight that education can be considered from two substantially different perspectives.

There are ongoing debates on how these elements (research, teaching, and learning) could support each other and be incorporated into the curriculum across almost the entire education system. What benefits will administration, academia, and students get from the approaches based on the related synergy? The concept of the possible ways of synergy could be studied from different angles and examples of existing practices of universities. Based on the literature review, the following part of the study describes research, the correlation between research and teaching, various models of research-based approaches, and implementation examples in the curriculum.

The pioneer of introducing the expectation of closer ties between research and education in academia was Wilhelm von Humboldt and his Neo-Humanist idea of equal opportunity and educational equity. In the 19th century, when Humboldt started creating a new education model, it turned out to be a revolutionary perspective compared to the earlier understandings of university, teaching, learning, and research. Humboldt's educational concept did not only contain individualistic interpretation. He always admitted the value of the organization of individual life and the "*development of a wealth of individual forms*" (Raithel et al., 2005). Humboldt stated that teaching should be led by research, and it should not be affected by any external influences, such as religion, economics, ideology, or politics. It was to be "a special feature of the higher scientific establishments which treated science as a problem that would never be completely solved and therefore to be engaged in constant research" (Raithel et al.,

2005, p. 7)

Remarkably, this was the first step, creating research-oriented universities, which was contrary to the post-revolutionary French concept where the universities' autonomy was abolished and went under the influence of the officials (political regime) (Ostling, 2018). In the Humboldtian model, the teacher can create curriculum, content and plan activities independently, and students have the right to choose their classes. Teachers and student both have their rationale in the knowledge acquisition process. Consequently, the goals of research and teaching are united (Hattie & Marsh, 1996). Accordingly, humanistic ideals and free thought should guide the studying process. Knowledge creation should be based on logic, reasoning, and experimentation and should not be influenced by traditionalism, dogma, or the rule of power.

The Humboldtian model captured the HEI's attention again in the 1960s when German sociologist and philosopher, Jurgen Habermas, started expressing similar ideas. In *The Idea of the University: Learning Process* (1987), he assumed:

Empirically, it appears to be an open question whether the stimuli behind the growth of knowledge wouldn't finally become paralyzed were they to specialize exclusively on the function of research. Scientific productivity might well depend upon the university's form, in particular upon that interplay of research with the training of future students, the preparation for academic careers, the participation in general education, cultural self-understanding, and public opinion formation. (Habermas & Blazek, 1987, p. 8)

Some universities tried to rethink their approaches and started putting research elements into the curricula, which helped develop their thinking using exploration and inquiry. Curiosity is an essential piece of the learning process, and so it requires examination, analysis, data collection, and various essential elements necessary for conducting and organizing independent research work. Bjorn Stensaker, from the University of Oslo and expert of the European University Association (EUA), claims, "research-based education is happening in Europe, but there are clear challenges with how it is defined and understood" (Stensaker, 2019).

Teaching and learning were always essential parts of Higher Education, and thus so is research. "Knowledge and knowledge production (research, teaching, and education) represent crucial features of and for universities and other HEIs" (Campbell, 2013, p. 213). Researchers from the Educational Sciences describe different methods for delivering information to students, ways of knowledge transfer, and, in the meantime, it is getting hard for both teachers/professors to discover which of these methods are sufficient and adequate for transferring knowledge. Without students getting disinterested or not fully present in their classes. Consequently, this leads the teachers to the less safe and structured approaches leading to a student-centered curriculum, whereby students can gather information themselves using their teacher's support and thus produce new knowledge (Landøy et al., 2020). University College London (UCL) offers its students a connected curriculum: a framework for research-based education. Students have the opportunity to learn by participating in different types of research and inquiry activities. UCL contends, "Students will be better equipped with a range of essential skills needed for an unknown future. They will be more engaged with their learning, and will be more autonomous thinkers" (UCL, 2020).

In its annual report (2020), European University Association focuses on implementing research and innovation in universities. According to the report, many universities prioritize integrating research into learning and teaching and strengthening the synergy. Developing valuable skills and competencies through engaging students in the research process is part of academics' perceptions, as students are encouraged to think independently and take responsibility for their performance (Simons & Elen, 2007).

9.2 Research Aim and Research Questions

This study aims to describe and explore the nature of research-based learning and teaching in the undergraduate curriculum and offer a unified structure for teachers from diverse disciplines and backgrounds to implement such an approach in the course plan. Furthermore, various articles and publications are discussed in the literature review part of this study, which aims to define the research orientation based on the different approaches and offer a framework for data analysis.

The main research question with sub-questions, which shaped the flow and the development

of the following study is:

- How can research-based learning and teaching be implemented in undergraduate studies or curricula?

    - How can research be interpreted, and what are its main characteristics?
    - What models explain the forms of synergy between research, teaching, and learning?
    - What are the implications of the different interpretations?

These questions will be the basis of the literature review and interpretation of collected data. It will look into how the research-based approach works in specific universities and the necessary steps to start its implementation.

9.3 Method

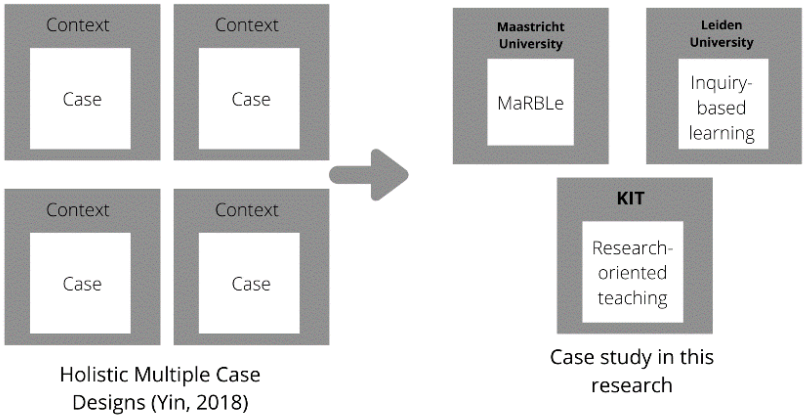
Depending on Fraenkell (2009), the main characteristics of qualitative research are to study real-world situations as they expand naturally. Collected data helps to discover essential aspects, categories, and interrelationships. The researcher directly participates in the process and gets close to the study participants to provide a detailed, broad description of the topic. Absolute objectivity is impossible, and it also has a unique case orientation. To summarize the qualitative methodology, it is usually used to explore social interactions, systems, and processes. However, for better representation, it is essential to use concrete, well-established method. In this study, the case study approach will be used, which depends on Creswell (2012), represents an in-depth exploration of concrete systems based on comprehensive data collections and analysis.

The study describes the research-based approach in three different universities: Maastricht University, the Netherlands, Leiden University, the Netherlands, and Karlsruhe Institute of Technology, Germany. Consequently, this is a multiple case study with a holistic view on the single cases, based on Yin's explanation (2018) (Figure 1). Furthermore, the study combines the descriptive and exploratory nature of the case studies.

Figure 1.

Holistic Multiple Case Study Design

Self-edited from Yin (2018, p. 96)



The case selection was based on the "most different" approach (Visser et al., 2017), supporting this study's main research questions and objectives.

The collection of materials and resources was also partially based on the Pilot study and the snowball method and followed the steps presented by Creswell (2012):

- Identification of key terms
- Evaluation and selecting the relevant literature (based on the abstracts)
- Allocation of the found sources into the different sub-groups (later sub-chapters of this study)
- Analysis in Atlas.ti coding based on the key terms and sub-chapter topics
- Writing literature review

Ten interviews were recorded in three different cases. Four with Maastricht University representatives. With the Coordinators of two different directions of MaRBLe, the teacher involved in the process, and the program's graduate. Additionally, there was an investigation of the MaRBLe, Research-based learning documentation: Case Studies from Maastricht University (Bastianes, Ellen; van Tilburg, Jonathan, van Merrienboer, 2017) and the associated website, describing the learning objectives and selection procedures. The number

of recorded interviews was not determined in advance, and the data collection continued till the information started repeating or limited contacts with the representatives. Sampling depended on the snowball principle and information of the coordinator accessible on the MaRBLe website.

In the case of Leiden University, three representatives were interviewed. Two of the respondents from the Graduate School of teaching (ICLON) and one teacher. All directly involved in the implementation of inquiry-based learning into the undergraduate curriculum. Together with the interviews will be analyzed approach of Fred Jenssen, program director at ICLON and professor of science education, who was the initiator of the new approach. This information will be supported by the document analysis, website, and articles around Leiden University's research-based orientation.

At the Karlsruhe Institute of technology, interviews were recorded with three representatives. From Personel Development and Vocational Education Center (PEBA) and faculty members, which are primarily involved in constructing the university's research-oriented approach and delivering support to the teachers.

The codes for analysis, transferred into the themes with the leading indicators, are the following:

- Starting with the program/project/approach
    - Historical approach
    - Encouragements
    - Necessary context/environment
    - Change development
    - Source of the idea
- Selection procedures (only applicable to Maastricht University Case)
    - Criteria
    - Timeline
    - Responsible persons
- How the program/project/approach works/is implemented
    - Theoretical background

    - Activities
    - Learning outcomes
    - Learning and teaching style
- The outcome of the program/project/approach
    - Examples
    - Received skills and competences
- Challenges
    - During implementation
    - Management
    - Teachers
    - Students
- Fitting into the framework of the study
    - Research type – mode one / mode two
    - Allocation in Healey's Matrix (2005)

The codes align with the structure of analysis as presented in this study's case study findings. Each case was analyzed within the country and university context

9.4 Validity and Trustworthiness

In the social sciences, the data's measurement is not the primary cause of the challenges of validity and trustworthiness. To hold the central role as the measurement method is rarely valid (Yin, 2018). To establish trustworthiness in the research, it was essential to keep in mind some crucial strategies and criteria: Truth Value, Applicability, Consistency, and Neutrality (Morse et al., 2002).

The conduct of this research ensured the study's validity and trustworthiness with different essential characteristics. First, to justify actual value, triangulation was used – interviews from different representatives (coordinators, teachers, teachers' advisors, alumni) were recorded, aimed not to miss the value of the contrasting sides. They were supported with the document analysis– the study of curriculum/guide/case study and website, which provided information about the structure, learning outcomes, and the objectives of the cases. The questions were open-ended to retrieve as much information from respondents as possible and not to restrict

the boundaries. Furthermore, the programs/projects/approaches were described to understand better the connection between the research topic and the case. There was no determined number of participants who should have been interviewed, and the process continued until the new information stopped accruing or more respondents were not accessible. As research was already limited to only qualitative study, it was important not to lose essential information from the interviews.

For ensuring internal validity patterns, all cases were analyzed within one framework of the codes and indicators. A similar questionnaire was used just adopted to the name and the respondent's perspective during the interviews. Furthermore, all the cases were chosen based on the articles found during the pilot case study research. Each case represents the unique perspective of the implementation of research-based teaching and learning at the respective university.

9.5 Main findings & Conclusion

Based on the literature review of this study, various interpretations of the research can be detected. It is described as a mechanism for searching for new knowledge, answering questions, or finding solutions. The focus on this unity was strengthened after introducing the new actors in the Triple Helix Model (Etzkowitz & Leydesdorff, 2000), which was enriched of societal impact and the connection towards Academia Government, Industry, and Civil Society (Carayannis & Campbell, 2012). This leads to another description and interpretation based on the OECD Frascati Manual (OECD, 2015), which demonstrates two definitions for research types: basic and applied research, considering the nature, characteristics, and aim of the research. Basic research is seen as the experimental or theoretically strengthened acquisition of new knowledge without application in the real world.

On the contrary, applied research has specific practical aims and objectives later to be used in real-life settings and environments. The line of the research definition continued by Gibbons's (Michael Gibbons et al., 1994) theories of mode one and mode two research. Gibbons characterized general knowledge prediction when researchers from the specific field collect data (valid and reliable) and create new theories. However, he also describes the main differences between mode one and mode two, as shown in Table 1.

Table 1.

Characteristics of Mode 1 & Mode 2 research, Comparison

Self-edited, Based on Gibbons et al., 1994. Nowotny et al.,2003. Etzowitz and Leydesdorff, 2000. Carayannis and Campbell, 2012

	Mode 1	**Mode 2**
Steering mechanism	A research question of an academic discipline	Problem-oriented, multidisciplinary
Authorization	Scientific rules	Professional & societal power / rules
Motives	Curiosity	Intention to respond to a practical challenge
Objectives	New theories	Usefulness, applicability
Type of the knowledge	General and disciplinary	Specific and transdisciplinary
Final Outcome	Publication	Product
Validation	Peers of the research community	The users, the community of wider stakeholders, society, users
Responsibility	To the scientific community	Societal responsibility
Actors	Researchers	Anybody with a connection to the topic
Relationship	Hierarchical	Heterarchical
Works forms	Planned, predetermined	Flexible, interactive
Approach	Closed into existing scientific frames	Open to innovation

Strategy	The first discovery, then an application	Simultaneous discovery and application
Time frame	Long term	Short Term

Illustration of the different modes and their dimensions supports evaluating the case studies described in this research based on their vision and performance. To see what type of research is essential for undergraduate students or what academics and program creators think is necessary for students to start an early stage of their tertiary education. As this study addresses the undergraduate studies explicitly, when students usually come from school education and after finishing, they can continue to the second level of the higher education path. Depending on the students' perspectives, understood from the interview and the reviewed literature, research is a "strange" phenomenon. Students do not have insights and are not familiar with the research process or theories behind it (Hattie & Marsh, 2004).

However, after exploring the cases, the nature of the research appears to stay in the mode one type by introducing mode two elements. Especially during undergraduate studies, students should know what "classical" traditional research represents to have skills for reading and analyzing scientifically valid data. Usually, students' first steps are taking into the university represent academia and academic research that could be developed towards different dimensions later.

The unity of research and teaching was a subject of discussion for a long time. Hattie and Marsh (1996) detected zero or negative correlation between these two actors in the meta-analysis. However, they also provided two supportive arguments to identify a connection between research and teaching with Conventional Wisdom and "G." Teachers should be familiar with ongoing changes and active research topics in the field for personal development and transfer "true" knowledge. As Jenks and Riesman (1968; Hattie & Marsh, 1996) formulated, if the teacher is not actively participating in the field-specific research, they will start to echo themselves and lost connection with modern society and problems. The strong emphasis was highlighted during the interviews around that element, as interviewed teachers and administrators were all involved in the research activities.

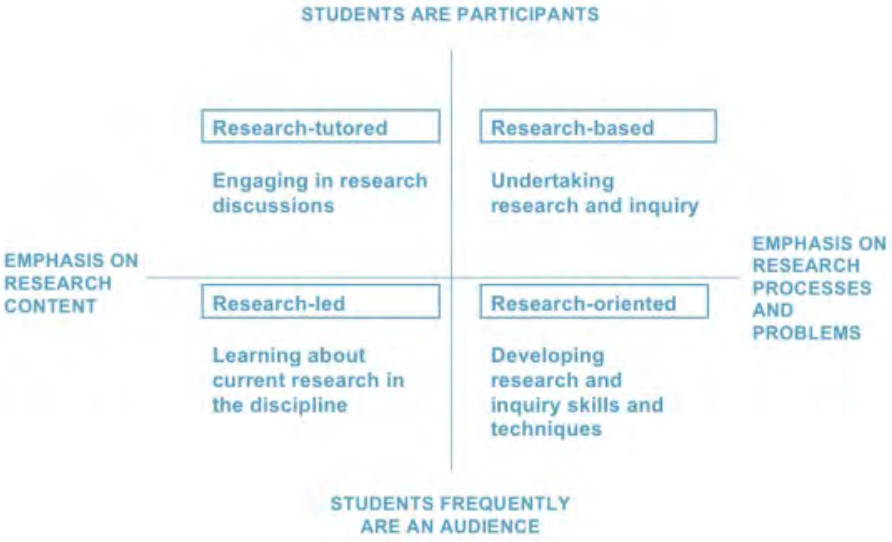
In some cases, active publications and ongoing research were typically present in the concrete

field. For administrative staff, mainly educational research is interesting, to stay informed and provide support to deliver quality education. For better representation of the research-teaching unity, there are several models discussed in the literature review chapter. The main focus of this study holds on Healey's and Jenkin's (2009), which was developed as the framework for data analysis (Figure 2).

Figure 2

Research-Teaching Nexus

The nature of undergraduate research and inquiry (Healey & Jenkins 2009, p.7)



With its four dimensions, the matrix covers two alternatives of teaching/learning style – student-focused and teacher-focused and emphasizes either research content or the research process. Turner (Turner et al., 2008) also mentions the transition of the research-teaching nexus and the examples. Based on this knowledge production model, the findings of three case studies with specific indicators and characteristics were allocated to different quadrants to see what is the vision of research-based orientation of the program/block/approach. Table 2 summarizes the classifications in light of the results of each case.

Table 2.

Self-edited

IBL – Inquiry-based learning, Leiden University; MaRBLe – Maastricht Research-based Learning, Maastricht University; Research-Oriented teaching – Karlsruhe Institute of Technology into the research-teaching nexus

	Research Content	Research Process and Problems
Students as Participants	Research-tutored IBL - Leiden	Research-based MaRBLe ROT - KIT
Students as Audience	Research-led	Research-oriented

The cases were purposely chosen as the "most different" ones to have the opportunity to describe how research-based learning and teaching are implemented in the curriculum, which is the main research question of this study. The cases offered diverse examples of how they allocate the research element and its benefits, considering the university's academic and country context. The literature review has also discussed the case of Humboldt University with HU-Q modules that is a different approach to showcase the implementation of research-based learning and teaching in the curriculum.

To summarize the findings and the literature review results, the next chapter offers a practical framework for teachers on how they might apply this approach into their course plan.

9.6 Recommended Framework for Research-based learning and teaching

Based on the findings of case studies and literature review in this chapter, a new model of the Research-Learning Nexus is presented, which connects the research-teaching nexus (Figure 2) and elements of the research-based learning decision-making wheel by Angela Brew (2013)

Table 3.

Self-edited

Research-learning nexus

Teacher-focused		Learner-focused		
Process		Process	Skills	Learning Outcomes
The Knowledge to be transferred is fixed, determined, and absolute		Knowledge is unknown and negotiable	Curiosity, Exploration Independent work	Primary and Secondary data collection techniques
Knowledge is new to the student		Knowledge is new to the discipline, society	Problem-solving, learning by doing, empathy towards societal problems	Field-specific Innovative theories, detecting the issues and challenges in the society/field, prior knowledge
The teacher chooses the topic/research question		The student chooses the topic/research question	Critical thinking, taking responsibility for made actions, asking questions, Creativity and innovation, Leadership	Field-specific Knowledge acquisition supported by the motivation
The teacher structures the task		The student decides about the structure of the work		Learning style (learning how to learn), field, specific research methodology
Inquiry is closed-ended, well-defined		Inquiry is open-ended	Searching, openness, collaboration, Peer- and Self-evaluation, criticism, impartiality	
Audience and output fixed		The student decides the audience and output		
Assessment	TRANSITION	The student		

controlled by the teacher		controls the assessment		

For implementing and transforming the course into more research-learning oriented, after analysis of case study findings and literature review, this study highlights essential phases/actions to be made:

- Questioning phase
    - Find the place on research-teaching nexus
- Preparation Phase
    - Transfer from old to the new plan
- Implementation Phase
    - Practice in the classroom
- Evaluation Phase
    - Get feedback

In the questioning phase, it is essential to evaluate existed course based on the characteristics listed in table 4.

Table 4.
Self-edited
Transformation of research-teaching nexus

	Focus on Teaching	Focus on Learning
Role of the teacher	Lecturer	Facilitator
Students	Audience (listening to the teacher)	Participants (active engagement and participation)
Focus is	On the research content	On the research process and problems
Learning outcomes	What students learn now:	What teacher want students to learn:

The recommendations of this study focus on the student-centered approach, where students take responsibility to perform research activities independently and are partners across the

course. Emphasis could be shared between research content, research problems, and the related process.

To summarize findings, implementing the research-based approach in different universities is essential from the beginning of undergraduate studies. It should contain various elements or blocks in each semester. Thus, Tables 5 and 6 are examples of the planning activities that support building up a research-learning-oriented process.

Table 5.
Self-edited
Example of research-based education 1

Research-tutored **The student-centered approach focuses on the research content**
First-year of undergraduate studies
List the main problems/issues in the field (pre-defined or based on the discussion)
Guidance – where and how to search for scientific papers
How to read scientific articles – what is the most important parts of the article
Sharing resources about main research methodologies in the field
Using collaborative learning techniques - working in groups to find answers
Presentation of answers

Table 6.

Self-edited

Example of research-based education 2

Research-based **The student-centered approach focuses on the problems and process**
The second or third year of undergraduate studies (depends on the length of the program, recommended in higher levels, but not final semester)
Guidance on research methodologies in the field
Presenting pre-defined narrow field-specific topics (number of the topics is based on the number of the students)
Collaborative learning – the creation of groups based on the topic preferences (recommended 4-5 members in each group)
Weekly meetings for updating the status of the research – round table (2-3 groups at a time)
Invitation of the topic-specific researchers/professionals during the round table meetings for presenting their research and receiving feedback on the students' research progress
Final Conference

9.7 Recommendation for Further Research

Considering the limited number of case studies, the limitations caused by the Covid-19 pandemic, and the lack of quantitative data, findings could not be generalized to the broader circle of universities. The research aims of this study focused on describing and exploring research-based teaching and learning practices of three different cases. The studies with the same objectives should orient towards further research-based learning and teaching characteristics in the future. The evaluation of the related projects, especially from the long-term perspective, still has great potential. What is the outcome of student-focused research-based education? What proportion of the future careers will be research-intensive, and in what fields? Especially, it will be essential to continue further studies with the distinction of mode one and mode two research framework and detect direct correlations with students learning outcomes.

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10 Technology Development Practice in Ethiopian Science and Technology Universities: Analyzing the Actors and Management

Mesay Liche

10.1 Background of the study

10.1.1 Problem statement

Along with their teaching and research missions, institutions of higher education have incorporated a third mission. The mission involves a number of components, including technology transfer (Berghaeuser & Hoelscher, 2020; Secundo et al., 2016; Marhl & Pausits, 2013), which is aimed at commercialization (Hellström et al., 2013). Ethiopia is no exception, and it has enlisted two S&T universities[1] to facilitate technology transfer in line with its industrialization-economic agenda (Oqubay & Ohno, 2019; Eckl et al., 2017).

Following prolonged adjustments in the teaching programs, the two institutions received a funding boost and implemented new structures and systems in 2014/15 to fully embrace the third mission. According to preliminary data gathered for the study, the two S&T universities have encountered technical challenges in managing technology development initiatives, resulting in delays and interruptions. In general, university-based technology transfer programs in developing countries are in their infancy (Fadeyi et al., 2019; Alessandrini et al., 2013), hampered by lower technical performance, a scarcity of financial resources (Ssebuwufu et al., 2012; Göransson et al., 2009), and project management issues. As a result, Göransson et al. (2009) recommended "institutional level" and context-specific remedies to Africa's university based technology transfer challenges (p.164).

In summary, it is vital to analyze the practice since effective technology development and transfer necessitate a vibrant internal management structure (Stock & Tatikonda, 2000). The

[1] Adama Science and Technology University (ASTU) and Addis Ababa Science and Technology University (AASTU)

study uses agency theory to conduct a thorough examination of the two universities' internal technology development challenges. Finally, this study could contribute to the empirical literature on technology development and transfer difficulties from the perspective of developing countries.

Hence, the research questions were:

1. Who were the actors in the technology development process of Ethiopian S&T universities since 2015?

2. How did the actors' relationship influence the outcome of technology development in Ethiopian S&T universities since 2015?

3. What are the potential improvements needed in the actors' relationship to improve technology development outcomes in Ethiopian S&T universities?

10.1.2 Theoretical background

Agency theory[2], by complementing it with Organizational Control theory, was used to answer the research questions. Anderson et al. (2007) demonstrated the importance of identifying actors, both internal and external, since they have a major impact on the efficacy of technology transfer in an empirical study. Agency theory is relevant for examining the relationships between actors involved in the development and transfer of technology (Gulbrandsen, 2010). The components of the analytical framework were derived through the theory's application in higher education institutions (see Kivistö & Zalyevska, 2016), projects (see Gulbrandsen & Rasmussen, 2012), and the public sector (Waterman & Meier, 1998). The study's subject, technology development at two S&T universities, shares these features. An agency theory works when an agent and principal participate in "cooperative action" while having "differing goals" (Eisenhardt, 1989, p.59). In an agency relationship, a principal invests resources in an agent to complete a task on the principal's behalf Braun (1993).

[2] The theory used in this study will be mostly referred to as Agency theory hereafter for simplicity.

10.1.2.1 Variables in the analytical framework

Identifying principals and agents

Identifying principals and agents, as well as their objectives, is a critical component in incorporating agency theory into a research's analytical framework (Gomez-Mejia et al., 2005). Empirical studies have defined principal-agent relationships in technology development and transfer activities using hierarchical, contractual agreement, funding, and oversight linkages (see O'Kane et al., 2015; Rasmussen & Gulbrandsen, 2012; Fama & Jensen, 1983). Meanwhile, the contract type that binds the principal and agent relationships should take agency variables into account (Kivistö & Zalyevska, 2016). The contract type is determined mostly by the measurability of outcomes and the measurability of tasks of the duty the agent carries out.

Outcome-based and behavior-based contract

The principal may adopt an outcome-driven contract in which the agent is evaluated on the basis of a manifested final output or performance outcome (Bergen et al., 1992). The conditions for employing this contract model are mostly determined by the outcome's measurement and tracking possibility (Ferris & Graddy, 1998). Contracts based on outcomes are optimal when the principal can reliably observe and quantify the outcome of the task (Mahaney & Lederer, 2003; Kivistö, 2005b).

Meanwhile, the challenge of enforcing outcome-based contracts stems from the complexities inherent in translating an agent's actions into an outcome (Ferris & Graddy, 1998, p.228). The outcome of the agent's conduct may be influenced by external circumstances outside both parties' control referred to as outcome uncertainty factors (Petersen, 1993; Bergen et al., 1992; McGuire, 1988).

On the other hand, a behavior-based contract is viewed as a complement to an outcome-based contract, and it is contingent upon task programmability. A principal may enter into a behavior-based contract specifying how the agent will be evaluated and compensated based on the acts of the agent while performing the task (Bergen et al., 1992). To enable monitoring and observation, a behavior-based contract requires the availability and dependability of

information and the visibility of behavior to carry out the task (Eisenhardt, 1989). (Lasser & Kerr, 1996; Eisenhardt, 1989). Rather than depending on the parties' tacit understanding and trust, it demands a comprehensive control procedure in the process (Schillemans & Bjurstrm, 2020; Fleisher, 1991).

10.1.2.2 Organizational control theory

The organizational control theory contributes to the study by proposing control methods where neither task programmability nor outcome measurability are possible for a given task (Eisenhardt, 1985). In such a context, "minimizing divergence of preferences" (Eisenhardt, 1985, p.136), also known as clan socialization, is a viable control approach (Snell, 1992). As a result, socialization is critical in developing shared goals and value-based commitment, which is the best control option when behavioral or outcome-based control is not viable (Eisenhardt, 1985).

10.2 Research methodology

A qualitative study design is utilized to gain a comprehensive understanding of a particular situation (Yin, 2011; Creswell, 2007), in this case, technology development in Ethiopian S&T universities. As such, the research was conducted in universities, which are the "natural settings" for technological advancements (Creswell, 2007, p.39). The researcher acquired the data directly from the participants via interview (Yin, 2011; Creswell, 2007), supplemented by document examination.

The case study style used in this study is a "multiple case study" model, which focuses on a certain task, method, or program (Creswell, 2007, p.74), which in this case is a technology development project. The purpose of this study was to conduct the first-ever analysis of the practice of technology development in Ethiopian S&T universities, making it exploratory research (Creswell, 2009).

10.2.1 Sampling method and Participants

The two universities' Technology Transfer Offices (TTOs) are responsible for the

management of technology development programs inside the universities. Academic staff who participated in technology development and transfer programs were counted as participants. The whole list of projects was compiled using data from TTOs. Due to the small sample size, all participants were considered for interviews or a census technique was utilized (Creswell, 2012), although a few developers were unable to be interviewed. A total of *twenty-three* participants, of whom *fourteen* were technology developers, *three* were TTO officials, *three* were university officials, and *three* were procurement and finance officials.

10.2.2 Data analysis

Thematic data analysis was used to make sense of the data in light of the theoretical framework and thematic concerns identified during the document review and interview process (Creswell, 2007, P.75). Thematic analysis assists in focusing on a certain "core issue" that may not be generalizable beyond the context of the case at hand but aids in comprehending its confluence (Creswell, 2007, p.75). Thematic data analysis was used, and code repetition, as well as context interpretation, was provided. This is because thematic analysis overcomes the limitations of content analysis, which is entirely dependent on the frequency with which "codes" are repeated by participants in order to interpret data (Joffe & Yardley, 2004). The codes were developed in accordance with the research topic and theoretical framework, as well as the issues highlighted during the interview, as Joffe and Yardley (2004) proposed (p.59).

The data analysis followed Creswell's (2007) guidelines for "categorical aggregation" and "direct interpretation" (p.163). In the former approach, shared experiences were categorized and interpreted. In the latter approach, peculiar experiences were interpreted even if they were not shared. This is because each technology developer's experience was unique and valuable in terms of its implications for future technology development projects (Braun & Clarke, 2006). Thus, diversity of expertise means a diversity of practice and the complex and dynamic settings encountered by actors involved in technology development at the two S&T universities. This is critical in new undertakings such as technology development, which are marked by their distinctiveness (Eldred & McGrath, 1997).

10.3 Key Findings

10.3.1 Identification of actors, principals, and agents in technology development

Technologies are developed within the two S&T universities, hence internal actors are the focus of the agency relationship. Meanwhile, the national structure of higher education institutions has a direct impact on the relationship of internal actors in the process of technology development. As a result, principals and agents are classified as national and university-level. At the national level, the Ministry of Science and Higher Education (MoSHE)[3] is responsible for overseeing the general operations of universities. The technology transfer program's performance is one of the operations reported to the ministry as one part of the overall university performance. By proclamation, universities are answerable to the MoSHE (see, for example, FDRE, 2014), establishing a supervisory function for ministries. As Lane and Kivistö (2008) illustrate, an agency relationship's accountability connection can be established legally by a proclamation and is defined by a "oversight" relationship (p.141).

Meanwhile, the Ministry of Finance (MoF) is responsible for overseeing the allocation and utilization of financial resources and for regulating procurement procedures in all federal institutions, including universities. The allocation of resources and budgets, as well as the auditing, reporting, and control processes, are all indicators of agency relationships (Schillemans & Bjurstrm, 2020; Johnson, 2011; Van Slyke, 2007), which makes MoF the principal in financial resource utilization control for universities. This distinction between entities that control the financial resources (i.e., MoF) and those that oversee the operational performance (i.e., MoSHE) at a national level has a direct impact on the process of technology development and the relationships between internal actors. Hence, the significance of these national ministries and institutions in this study is to demonstrate how this scenario affects the internal actors in technology development.

University level actors

TAs a practice, TTOs and technology developers engage in a written contractual agreements

[3] The ministry of Science and Technology (MoST) was supervisory authority for the universities from 2015-2018 and MoSHE afterwards

within universities, with the latter developing technologies on behalf of the former. The written contract enables the principals, TTOs, to exert influence over the technology developers, agents, by establishing a principal-agent relationship between the two actors (Mahaney & Lederer, 2003). Accordingly, as agents for TTOs, technology developers are academic staff members who participate in the process due to their expertise.

Meanwhile, finance and procurement offices within universities work in accordance with the MoF's rules and regulations. The MoF maintains a direct working relationship with university finance directors through an item-based budgeting approach and periodic reporting (see fig.1). Typically, MoF rules and regulations focus on budget usage and procurement processes throughout all federal institutions and across all university programs. As one respondent put it, "the financial and procurement procedures that regulate research and technology transfer are the same to those that govern supplies for the student cafeteria." As a result, TTOs within universities face what has been dubbed the "accountability paradox" by Kivistö (2005). (p.9). Universities place a priority on contract compliance with financial rules and regulations than on technology development operations. This had a detrimental effect on the contract execution between TTOs and technology developers, as well as the outcomes of technology development projects.

10.3.2 Agency Contract type

The TTOs, in coordination with university leadership, report to MoSHE on the number of projects initiated, completed, and transferred in comparison to their plan as a performance report. This indicates an outcome-based contract, as performance can be quantified (Ferris & Graddy, 1998). Similarly, the contract between TTOs and technology developers is an outcome-based contract that requires the outcomes of technology development as prototype. Johnson (2011) states that a prototype is taken as an outcome of a technology development project in his empirical study. Meanwhile, the projects are not subject to consequential task-based control by TTOs at the two S&T universities. The majority of technology development programs at the two S&T universities are based on duplicating and modifying existing technologies in order to replace imported technologies. As a result, participants assert that measuring outputs is technically feasible. Meanwhile, the two universities face a significant measurement issue as a consequence of outcome uncertainty factors in the technology

development process. Typically, outcome uncertainty is significant in technology development initiatives, which dictates the project's outcome (Rasmussen & Gulbrandsen, 2012).

All the technology developers and TTO officials who participated in this study concurred that the significant uncertainty factors are related to the finance and procurement processes during technology development. The majority of developers also included technical skill gaps, and the low level of cooperation from external stakeholders contributes to the outcome uncertainty.

Mobilization of resources for technology developers is governed by MoF rules and regulations that are not adapted to the needs of the technology development program. Inaccessibility to imported purchases, lengthy procurement procedures, inconvenience associated with procuring low-cost items and a lack of flexibility to cover unexpected costs are all outcome uncertainties associated with financial rules and regulations promulgated by the MoF and executed by universities' finance and procurement offices. Because of the existing procurement system, technology prototypes that require components that are not available in the local market could not be obtained from abroad. Preference for low-cost parts diminishes the quality of the components, which in turn affects the quality of the prototype. Above all, the line item budgeting and procurement procedures impose inflexibility on the budget spending and procurement processes in response to essential changes in the technology development process. As a result, modifications to the finance and procurement systems are not considered against the main feature of innovation in technology development.

Throughout the process of technology development, the other uncertainty factors affecting the outcome of technology development are a lack of cooperation from external stakeholders and a skill gap among technology developers. Throughout the technology development process, developers encountered a lack of collaboration from other institutions and their own skill gaps, as this was their first engagement in technology development initiatives.

As a result of these outcome uncertainty factors, the outcome-based contract between TTOs and technology developers of completing projects on schedule and with a defined prototype was not met. As a result, implementing the outcome-based contract, producing prototypes

suitable for transfer and transferring technical outputs have been barely achieved thus far.

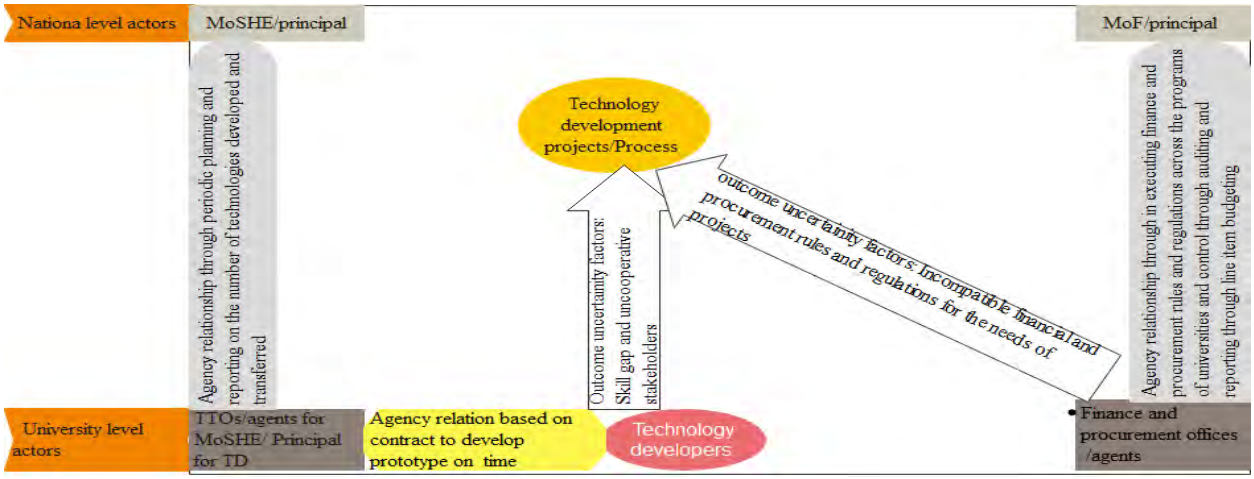

Figure 3.summary of agency relationships and outcome uncertainties

Note: the existence two actors at national level and parallel units within universities created outcome uncertainties

The agency relationship between the MoF and university finance and procurement is beyond the scope of this investigation. Nevertheless, the presence of many principals (Waterman & Meier, 1998) and additional agency links (Shapiro, 2005) complicates agency interactions and contributes to outcome uncertainty. With the current arrangement, the separate principals responsible for supervising activity and resource allocation for technology development caused uncertainty about the outcome of the technology development process at the two S&T universities (see fig.1).

There is also a theoretical explanation based on the distinct mandates of the MoSHE and the MoF. According to agency relationship theory, the principal's decision-making authority over the agent's resource allocation encourages the agent to operate in the principal's best interest (Braun & Guston, 2003). As a result, for an agency partnership to be effective, the principal's resource is required (Rasmussen & Gulbrandsen, 2012; Braun, 1993). However, because the MoSHE does not mobilize financial resources, TTOs within universities have prioritized the interests of the MoF.

10.4 Recommendations

There are two key recommendations for mitigating the outcome uncertainty factors. To begin, the mandate for technology development budget utilization control should be placed under the auspices of a single body at the national level, and this arrangement should be replicated under the mandate of TTOs' within the universities. Second, TTOs should incorporate clan socialization into the technology development process in order to close knowledge and skill gaps and cultivate a support system for technology developers among stakeholders.

10.4.1 Establishing an intermediary entity

Both budgetary control and technological development activities should be consolidated at the national level under one entity and TTOs bestowed with the same power within universities. These solutions substantiate Braun and Guston's (2003) assertion that the principal should be able to allocate resources to its agent in order for the latter to accomplish the former's objectives. Additionally, such intermediary agencies in charge of research and technology transfer funding and performance control are available in many countries (see Gulbrandsen and Rasmussen, 2012). However, this proposal is made given a thorough analysis of its implementation in administering the research, community service, and technology transfer program of Ethiopian public institutions will be conducted.

10.4.2 Introducing clan socialization control

Intervention is required to close the knowledge and skill gaps of technology developers , as well as gaps in stakeholder cooperation. These issues can be addressed through capacity development and a support structure that incorporates clan socialization. Workshops and seminars, according to Ouchi (1979), facilitate clan socialization and the pursuit of common goals among stakeholders. This includes exposing technology developers to training, visits, and workshops with experts from industry and other local and institutions and abroad, while they are developing technology and collaborating with stakeholders. According to Heslop et al. (2001) technology readiness study, the "support system" during the technology development process in higher education institutions is a significant component for the successful transfer of technology (p.373), as Secundo et al. (2017) also assert. Finally, detailed research is required on the link between the MoF and Ethiopian Higher Education

Institutions (HEIs), including the rules, regulations, and financial systems Vis-à-vis universities' missions of research and third mission.

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11 Understanding University-Industry Collaboration on Project-based Learning in Business Education

Syuan-Ru Lin

11.1 Background of the study

Numerous curricular efforts have been paid by pedagogical experts and learning scientists to develop new forms of teaching and learning such as project-based learning to prepare students for a dynamic 21st-century society (Krajcik & Shin, 2014). Gharbi et al. (2015) warned that a majority of active teaching approaches in higher education neglects the presence of industry in academic projects; Epure (2017) stressed the need to encourage cooperation between higher education and industry and argued that partnership must be established between students, teachers and employers. Fortunately, project-based learning can be client-based (R. K. Smith, 2010). University-industry PBL courses could be a solution to bridge higher education teaching and learning with industry requirements and real-world dynamics.

Current literature identified “planning and operating” to be key challenges for teachers to implement PBL. For example, Thomas (2000) conducted an inclusive review of research on PBL, and concluded that “there is evidence that project-based learning is relatively challenging to plan and enact” (p. 36). Helle et al. (2006) identified that the most commonly reported challenges was “the organization and administration of project-based courses can be very time-consuming” (p. 304). García-Martín & Pérez-Martínez (2017) further corroborated that teachers need to pay greater efforts in redesigning modules, operating classes and assessing students' learning. Moreover, when an industry partner is involved in the project, additional considerations need to be addressed, for example, inputs from client, pressures to achieve commercial quality results, and high levels of expectations in sponsoring corporations (Danford, 2006; Wodehouse & Mendibil, 2013). Therefore, it is against this background that further research on effective collaboration with industry partners in project-based courses is needed.

In the context of business education in universities, Smith & Gibson (2016) suggested that

PBL in colleges of business serves as an important step to cultivate well-educated graduates. They encouraged the use of PBL in business education by stating that “Project-based learning is a vital factor in the mission of producing graduates who have a holistic view of the business world” (pp. 45–46). They emphasized that even though PBL has been widely adopted by various academic disciplines, “It has now become a center-point for business” (p. 42). Danford (2006) advocated for the need to apply PBL in international business education through academic-corporate collaboration. This is because by working with real corporations, it allows students to engage in real-world business situations. Moreover, students will be able to acquire the skills and competencies that industries are seeking during the process.

Despite several empirical case studies on university-industry collaboration on PBL in business education (e.g. Danford, 2006; R. K. Smith, 2010), there remains little literature on the perspectives of the stakeholders involved in university-industry collaboration. The current literature on university-industry collaboration on PBL in business education usually centers on a single perspective (mostly from the faculty’s perspective) to constitute a descriptive case study. Overall, little has been done to study multiple stakeholders’ points of view at the same time (the faculty, the industry partners and the student teams) to achieve a successful university-industry collaboration on project-based learning. Moreover, there is an absence of research on what is happening behind the scenes, for example, how do faculty staff recruit industry partners for a project, how do industry partners come up with a suitable project topic, and how does each stakeholder evaluate the project experience.

11.2 Research Objective and Research Question

In order to diminish the barriers of planning and operating a PBL curriculum for universities, particularly in the context of university-industry or academic-corporate collaboration, the purpose of this study is to understand the process of initiating, collaborating and managing PBL courses by faculty staff and industry partners in business education. This study employs a case study approach with a multiple-case design. The research aims to unfold the elements involved in the process as well as potential challenges and solutions. Perspectives of multiple stakeholders are included and analyzed. It is critical for educators in the field of higher education to understand the know-how of a successful university-industry collaboration on project-based learning, in order to reinvent the curriculum and bridge the gap between what is

being taught in universities and what the society truly needs. The main research question being explored in this study is: ***"How are PBL (project-based learning) courses initiated, collaborated, and managed by the faculty and industry partners in business education?"***

11.3 Conceptual Framework

In the context of this study, a 3-pillar conceptual framework of partnership, pedagogy and procedure has been proposed to serve as the lens through which a university-industry or academic-corporate collaborated PBL course is empirically analyzed. It could be illustrated by a metaphor of a construction project (see Figure 1):

- the *partnership* between the faculty, the industry partners and the students as the ground and foundation for PBL course collaboration

- the *pedagogy* of project-based learning and the course design as the blueprint of the house, which could be in various styles and types

- the *procedure* as the phases and milestones that continually build the collaborated project-based course from zero to hero

FIGURE1

THE 3-PILLAR CONCEPTUAL FRAMEWORK

Note. Figure created by author

The key elements of each pillar were primarily identified from existing literature as follows:

- Iyer (2003): partnership characteristics and partner characteristics

- Melin et al. (2009): project-based learning framework for course design

- Project Management Institute (2017): project life cycle

The author has carefully considered the various elements suggested in the literature and decided to adjust the elements to be examined in this study. Table 1 presents the key themes analyzed in this research.

Table 1

Key Themes Analyzed in This Research

Dimension	Pillar 1: Partnership	Pillar 2: Pedagogy	Pillar 3: Procedure
Key themes	(1) Motivations (2) Partner recruitment (3) Formality (4) Responsibility (5) Communication systems (6) Maintenance (7) Challenges in partnership	(1) Overall course design (2) Project task (3) Project group (4) Examination (5) Feedback (6) Course evaluation & improvement (7) Challenges in teaching & learning	(1) Project phases (2) Key tasks

11.4 Methodology

This study explores the “how”, “what” and “why” questions which are exploratory and require qualitative data to obtain a clear picture, and thus follows a qualitative approach. This research further employs a strategy of case study, in which the chosen example is studied thoroughly and a range of varied data is collected (Fraenkel & Wallen, 2009). An embedded multiple-case design was chosen for this study, where more than a single case and multiple units of analysis were used to address research questions (Yin, 2003).

This research investigates a single pilot case study at National Taiwan University and three European case studies where one of them is located at Aalto University in Finland, and the

remaining two at Corvinus Business School in Hungary. Each course is the subject of an individual case study, but the research as a whole covers multiple project-based learning case studies. In each case study, the main unit of analysis is the course collaboration as a whole, while three sub-units of analysis were addressed based on the conceptual framework, namely: (a) partnership, (b) pedagogy and (c) procedure.

In order to obtain holistic pictures of the case studies and draw implications from there, three types of information (demographic, contextual and perceptual) were collected by two methods: documents and stakeholder interviews (the faculty, the industry partners and the students). Overall, 16 documents were studied. A total number of 20 interviews were conducted, where 17 unique participants were interviewed.

At the beginning, the researcher generated initial codes deductively based on the 3-pillar conceptual framework to reflect the researcher's theoretical interest in the area. After the interview transcripts was organized by pillars and themes, the researcher then returned to the data and conducted an inductive analysis to look for patterns and form sub-themes. Implications and practical suggestions to initiate and sustain a collaborative project-based course were then provided according to the findings.

11.5 Key Findings

Project-based learning is among the most widely discussed learner-centered pedagogies in the education field. Particularly in higher education, it is frequently used to stimulate relevant self-directed learning, to cultivate transferable skills such as problem-solving, intercultural collaboration, communication and project management, and to equip students with a holistic experience where they apply knowledge to real-world settings across subject boundaries. Students reported that they appreciated project-based learning with the involvement of a real industry partner, since the authenticity of solving a real business problem and receiving feedback from the corporate side would motivate them. This study seeks to unfold how university-industry collaborative PBL courses are initiated, collaborated, and managed in business education through the lens of a 3-pillar framework (Partnership, Pedagogy, Procedure). An Asian pilot case study and three European case studies were conducted, examining the perspectives of the faculty members, industry partners, and students. Key

differences among the case studies are illustrated in Table 2.

Table 2

Key Differences Among Case Studies

	Pilot Case (Introduction to MIS)	Case 1 (IDBM Industry Project)	Case 2 (CEMS Business Project)	Case 3 (Project Assignment)
Partnership				
Initiator	Industry Partner	The Faculty	The Faculty	The Faculty
Partner Recruitment	N/A	The Faculty's Network	Existing Alliance	The Faculty's Network
Formality	No Contract (Based on Mutual Trust)	Project Contract (Institutional Relationships)	Partnership Contract (Institutional Relationships)	No Contract (Based on Personal Relationships)
Faculty Roles	- Course Leader - Course Assistant	- Program Director - Academic Supervisors - Academic Staff - Program Manager - Community Manager	- Academic Director - Course Leader - Academic Supervisors - Corporate Relations Manager	- Course Leader - Academic Supervisors
Pedagogy				
Course Type	Introductory Course	Capstone Course	Capstone Course	Capstone Course
Course Activities	Lectures & Projects	Workshops & Projects	Projects	Projects
Group Formation	Self-proposed by students	Decided by the faculty with the aid of a questionnaire	Matching the preferences of students and industry partners	Self-proposed by students

The study revealed that the rationales for industry partners to take part in a university-industry collaborative project course could be captured by four purposes: recruitment, branding, value-creation, and talent-cultivation. The degrees of formality of a partnership have a linkage with the nature of relationships between the faculty staff and the industry partners. The partnerships based on institutional relationships are characterized by formal contracts and sometimes project fees, while the ones based on personal relationships are characterized by high flexibility and mutual trust. It is worth noting that in every single case, partner recruitment was identified as a top challenge of PBL course implementation.

Different partner recruitment strategies also imply different organizational structures. The case of the Project Assignment course had the simplest composition of faculty, and it was the academic supervisors who recruited industry projects from their existing personal networks and served as the primary point of contact. In the other two cases, apart from the course leader, there was either a program manager or a corporate relations manager supporting the coordination of project recruitment or practicalities of project implementation. Throughout the collaboration with industry partners, challenges of managing expectation, effective and thorough communication between stakeholders, and fluctuations in partners' commitment over time were encountered by the faculty members.

PBL could be applied in different course types. The pilot case study highlighted ***an introductory course*** in a certain field, while the three European case studies shared some characteristics of ***a capstone project***, for example, requirement of previous knowledge or a multidisciplinary aspect. When it comes to the teaching and learning dimension, instructors applied different methods based on different beliefs. Some course instructors planned workshops alongside students' project work to guide them on certain methodology or facilitate project progress, whereas others decided to minimize the teaching element since they learned from experience that professional tools and approaches might not be the key to students' success in project results. Some course instructors gave students complete autonomy to form their own teams to avoid personality clashes; contrarily, some perceived a team composition assigned by the faculty as a great opportunity for students to learn to negotiate through conflict. On the other hand, although all the industry partners expressed positive views towards the project results, they reported a diverse experience of working with students. Some spoke highly of students and were impressed by students' enthusiasm and quality work, whereas others sometimes experienced a sense of losing control due to students' passive attitude occurred at the beginning of the project.

Finally, to serve as a guiding reference for future instructors, the author breaks down the whole PBL course collaboration into four project phases: the preparation phase to lock down the partner list and project ideas, the project kick-off phase for industry partners and student teams to align project plan and deliverables, the actual project work where students are in the driver's seat under the supervision of the academic supervisors and corporate project advisors, and finally the evaluation and closing phase where a presentation day is organized and the course evaluation is performed.

11.6 Recommendations for Practice

Drawing from a review of available literature and the analysis of multiple case studies, a series of practical recommendations are proposed for future practitioners to develop and implement an effective PBL course with industry partners. The recommendations are classified into four groups according to project phases.

11.6.1 During Preparation

11.6.1.1 Course Planning

- ***Decide on the purpose of applying PBL.*** It is common to apply PBL in an introductory course which focuses on a holistic experience regarding a certain theme in a certain field, or a capstone course where either the application of previous knowledge or an integration of different subjects is emphasized. It is suggested to distinguish these purposes in an early stage to support effective course design.

- ***Reconsider learning outcomes.*** The syllabuses of three European case studies suggested multiple learning outcomes for the PBL course, for instance, application of knowledge or a specific methodology, problem-solving and research skills, intercultural collaboration skills, communication and presentation skills, social skills, and project management skills. Nevertheless, Helle et al. (2006) warned that it is critical to focus on limited goals, since excessive ones might not be feasible.

- ***Communicate workload requirements.*** Clearly articulate and emphasize the course requirements (e.g. the number of hours required per week) before project commencement to ensure students' commitment and dedication.

- ***Consider group size***. Limit the total number of students participating in the class (15-20 persons) and in individual teams (5-6 persons in large projects, 2-4 persons in small projects) to simplify control and coordination of the course.

- ***Set up the role of a Community Manager.*** When there is a large number of student teams, it could be beneficial to have a community manager, who is a current or a former student and acts as the bridge between the students and staff faculty. The community manager who is close to students could gather informal course feedback every now and then, and flag potential issues in an early stage.

- ***Consider the grading mechanism.*** It is suggested by Melin et al. (2009) that the examination should assess students' performance in both individual work and group work. However, some case studies highlighted a single mark for all team members for

every deliverable. Moreover, peer evaluations were taken in different formats. In the IDBM Industry Project, the result of peer evaluation might affect individual's grade, whereas in the Project Assignment, the aim of peer evaluation was only to provide developmental feedback such as strengths and weaknesses for each other without association with grades.

11.6.1.2 Partner & Project Recruitment

- ***Decide on the partner recruitment strategy.*** A common approach is to recruit through historical database, alumni, and the faculty's networks if there is not an existing alliance of corporate partners to leverage. Partnerships based on pre-existing academic-corporate relationships rely more on mutual trust and might not involve the contracting process, while projects involved project fees are usually associated with formal collaborative agreements between the university and the industry partners.

- ***Sourcing a wide portfolio of partners & projects.*** Firstly, it is emphasized by both the faculty members and students that a project topic relevant to the course objectives is the most important criterion for partner selection. Secondly, desired projects also feature a real business problem to solve with room for creativity. Thirdly, partners have to commit an appropriate level of time and effort. Fourthly, it is preferred to have a wide portfolio of projects offered by large companies, smaller ones, and NGOs in order to fit students' diverse preferences.

- ***Seek alumni's support.*** The university's alumni working for the corporate partner usually have a much higher level of motivation to contribute in either giving lectures or providing mentorships to students.

- ***Look for back-up projects.*** The potential mismatch between the number of student teams and the number of projects could be mitigated by recruiting relevant projects from various departments of the university.

11.6.1.3 Roles & Expectations

- ***Clarify roles of industry partners.*** Some industry partners perceive themselves as

clients who keenly expect high-quality results; others regard themselves as mentors who prioritize students' personal growth; still others see themselves as both. It would be valuable to reach a consensus between all stakeholders before project kick-off.

- ***Clarify roles of academic supervisors.*** Although positioned as a supporter, the unclear role and unstable engagement level of the academic supervisor have been identified as an improvement area by both industry partners and students. Clarify the duties of academic supervisors and find the way for them to contribute to the project would be critical to enhance PBL collaboration.

- ***Discuss the expected workload for students.*** Ensure that the corporate partners are aware of the depth of the research or the work that they are expecting from the students to avoid a yawning gap of workload across different project teams.

- ***Require multiple company project advisors for one project.*** The findings reveal that the industry partners, on occasion, tend to postpone the regular meetings or become not approachable when themselves get busy. In this regard, allocating more company project advisors to support one student group proved to be a solution.

11.6.2 During Project Kick-off

11.6.2.1 Team Formation

- ***Decide on the group formation strategy.*** Numerous approaches for groups formation are possible. This could be self-proposed by students to avoid personality clashes or it could be decided by the faculty with the aid of a questionnaire to balance diversity in nationality, gender, professional background, and students' motivation. Alternatively, a mathematical model matching the preferences of students and industry partners could potentially satisfy most stakeholders. A combination of these strategies might also work.

11.6.2.2 Project Commencement

- ***Create a clear project plan.*** The industry partner should discuss with the student team

to identify a clear and feasible work plan, including the timeline, milestones and deliverables as early as possible.

- ***Provide relevant workshops or onboard trainings.*** There could be methodology workshops to provide students with useful information and tools, or for example, a problem framing workshop to bring student teams and the industry partners together to find mutual ground. Beside this, industry partners may consider to provide students with relevant onboard trainings.

- ***Students' attitude matters.*** The faculty should encourage student teams to establish a positive impression on the client at the beginning of the project to increase client confidence and foster mutual trust.

11.6.3 (c) During Actual Project Work

11.6.3.1 Quality Assurance

- ***Request regular updates & mid-term deliverables.*** It is suggested by literature and one industry partner that requesting a mandatory weekly or bi-weekly progress report or a regular status update as well as mid-term reflective reports or deliverables from students would increase the comfort level of industry partners and ensure that the team is making continuous progress.

- ***Provide recurrent feedback.*** Real-time feedback is invaluable to students. Academic supervisors and company project advisors are expected to provide feedback during regular meetings and by each milestone.

11.6.3.2 Partner Relationship Maintenance

- ***Promote open communication.*** Construct feedback mechanisms for all stakeholders. Build a culture of open and immediate communication.

11.6.3.3 Interactions Between Stakeholders

- ***Encourage academic-corporate interactions.*** The findings suggest that the interactions between academic supervisors and the company project advisors are relatively rare. However, an active engagement from both sides would facilitate intellectual exchange.

- ***Build a steering committee.*** One effective way to keep all stakeholders on the same page is to build a steering committee between all stakeholders (typically the student team, the company project advisor, and the academic supervisor) where students present the deliverables on a regular basis.

- ***Facilitate interactions across teams.*** Although student teams are working on different project topics, they might be facing similar challenges. A discussion session among student teams would allow students to learn from each other.

11.6.4 (d) During Evaluation & Closing

- ***Organize a Presentation Day.*** Every case study in this research organized a Presentation Day for students, where academic supervisors and industry partners were all invited. Upon request, student might have to present again at the corporation's premises with a more detailed version. This Presentation Day serves as a motivator for students and supports a less subjective performance evaluation. Students can also get developmental feedback from the audience.

- ***Collect course feedback from all stakeholders.*** Apart from the course evaluation questionnaire sent to the students, the faculty members could collect feedback from industry partners through email or a corporate dinner after students' presentations.

11.7 Acknowledgements

I would love to express my gratitude to my supervisor Assistant Professor Orsolya Kálmán for all her contributions of time, effort, untiring support and invaluable guidance.

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12 Understanding the role of research professional staff in supporting academic researchers in a university

Woon Yen Loi

12.1 Abstract

Current literature demonstrates that the role of research professional staff is increasingly critical in managing and developing research activities within a university. However, there appears to be a lack of clear understanding on their role and a paucity of engagement with research support services by academic researchers. Using Systems theory and the theory of Third Space, this study aims to delineate the multifaceted roles of research professional staff, and examine the enabling and inhibiting factors which influence the collaboration between research professional staff and academic researchers. This study is conducted through a qualitative case study approach with a purposeful sample of research professional staff and academic researchers ranging from early, mid and senior academics. The results reveal that research professional staff play a critical role in the areas of research management, research development and researcher development. They perform multiple roles that have a supportive, strategic and/or developmental element. Furthermore, they identify their roles to be constructive and of added value to their academic colleagues. A range of generic and specialist skills and knowledge are needed by research professional staff to perform their roles effectively. The collaboration between research professional staff and academic researchers are partly inhibited by an underlying culture of hierarchy. However, having a shared purpose between these groups of staff is identified as an enabler to overcome this barrier. Overall, this study illustrates that whilst research professional staff play an increasingly critical role in facilitating research activities within a university, more efforts need to be invested in promoting the positive contribution and values that they can add.

Keywords
Research Professional staff; Academic researchers; Research management in higher education, Systems Theory; Third Space.

12.2 Problem statement

Research universities have a crucial role in the development of a global knowledge economy (Altbach, 2013), and are often described as highly complex and multifaceted institutions which serve the different societal needs (Altbach, 2007). Over the past few decades, the dynamics of research has evolved such that the practice, funding and governing of it have changed significantly. For example, due to a decrease in public funds within higher education, research has been progressively funded on a performance basis (Hicks, 2012). The mode of research has also shifted from linear to non-linear, with an emphasis on multidisciplinary, interdisciplinary and transdisciplinary research (Gibbons, 1994). Furthermore, research universities are required to engage with a wider body of stakeholders in order to diversify their sources of research income (Estermann & Bennetot Pruvot, 2011). Most importantly, the research performance of a university contributes to its institutional ranking and echoes its prestige (Hazelkorn, 2008; Lucas, 2006). In order to ensure sustainability, research universities are required to be more strategic with the development and management of their research activities (Connell, 2004). However, the management of research has been challenged with several key issues. Among them is the lack of clear structures and processes for research management across institutions, despite the increasingly prominent research mission (Connell, 2004).

In order to develop effective research management, universities must grow and professionalise the management of their research activities (Connell, 2004). This includes employing both academic researchers and research professional staff to specific research management positions and upskilling the capabilities of staff to manage research activities more effectively. However, several studies showed that despite an increasing investment towards research management, the roles and functions of research professional staff remain poorly understood and undervalued by academic researchers (Collinson, 2006; Green & Langley, 2009; Hockey & Allen-Collinson, 2009; Shelley, 2010). Consequently, this has led to a lack of engagement and under-utilisation of research support services. Therefore, it is against this background that my research aims to examine the multidimensional roles of research professional staff in supporting academic researchers with research in a university. This research also sought to identify the enabling and inhibiting factors which influence the collaboration between research professional staff and academic researchers.

12.3 Research Questions

Based on the research aims above, the central research question for this study is:

What is the role of professional staff in supporting academic researchers with research in a university?

In order to address this central question, five guiding questions are posed:

1. How do research professional staff perceive the external and institutional environment?

2. How do research professional staff implement institutional research policies?

3. How do research professional staff perceive their roles in supporting academic researchers with research?

4. How do academic researchers perceive the roles of research professional staff in supporting academic research?

5. What are the enabling and inhibiting factors influencing the collaboration between research professional staff and academic researchers?

12.4 Theoretical background

This research employs Systems theory (Katz & Kahn, 1978; Von Bertalanffy, 1968) and the Third Space theory (Whitchurch, 2008) to examine the role of research professional staff in supporting academic researchers within a university. Systems theory is used to situate the role of research professional staff within the complex university research environment. The theory of Third Space on the other hand, is used to contextualise the role of research professional staff as “blended professionals”, “hybrid workers” or “multi-professionals” (Whitchurch, 2006, p. 4) who are situated between the academic and non-academic domains in the university. As a whole, both theories serve to examine the role of research professional staff at an organisational and individual level.

Systems theory aims to explain and diagnose problems from a holistic manner. A system can be defined as a set of elements that are interrelated, interactive, and interdependent (Hall & Fagen, 1956). An effective system consists of different elements which are maintained and enhanced by a purposeful structure in order to accomplish a common goal (Cole, 2010). An open system constantly interacts with the environment by exchanging input and output, whilst a closed system does not (Katz & Kahn, 1978). A university can be considered as an open system due to its continual engagement and exchange of information with its external environment. The input-throughput-output model (Skyttner, 2005) within Systems theory is useful to examine the contributions of research professional staff. The "input" element allows us to identify the financial, material and human resources that research professional staff are responsible for gathering, interpreting and communicating to the university's research system. The "throughput" element helps to characterise the different processes that research professional staff are responsible for, and the different skills and knowledge involved in performing these processes. Finally, the "output" element helps us to distinguish the contributions and impact of research professional staff as part of their role. Table 1 provides a summary of the key concepts of Open Systems theory.

Table 1

Key concepts of Open Systems theory

Concept	**Definition**
Input	Resources and/or information required to sustain the organisational systems. Organisational inputs could be in the form of products, raw materials, human resources, information, technology, cultural expectations, and even human predispositions.
Throughput	Processes and activities within the organisational system used to achieve the intended goals.
Output	Outcomes, products and services which are created and delivered by the organisation.
Feedback loop	Ongoing source of information from the external environment funnelled through to the system.
Systems as cycles of events	The cyclical process of exchanging and transforming energy to renew and sustain the system.

Source: (Katz & Kahn, 1966, pp. 23 - 30)

The Third Space theory proposed by Whitchurch is used to contextualise the role of research professional staff as "blended and hybrid professionals" (Whitchurch, 2006, p. 4). This is because the role of research professional staff do not fit within the conventional roles of Human Resources or Finances as these individuals are often equipped with academic credentials such as a Master's degree and/or a PhD (Whitchurch, 2015). As a result, they often perform academic duties such as the writing of research bids and reviewing research applications (Shelley, 2010). Whitchurch (2010, p. 12 - 15) suggested three possible encounters of individuals working in the Third Space: contestation, reconciliation and reconstruction. These encounters are dynamic and based on an individual's adaptation with their workplace and colleagues. Table 2 provides a summary of the three dynamic phases.

Table 2

Dynamics within the Third Space

Phase	Description
Contestation	Individuals feel constrained by the existing dominant rules and regulations. Individuals may comply to rules and regulations, but privately detest them.
Reconciliation	Desire for collaboration, new relationships formed, unbounded by rules and regulations
Reconstruction	New activities, relationships and new rules and regulations formed from

Source: Whitchurch, 2010, pp. 12- 15

12.5 Methodology

This research subscribes to both a postpositivist and interpretivist worldview. The postpositivist worldview is reflected in the chosen theories presented in Chapter 3 which serve as a preliminary framework for guiding the study. The interpretivist worldview is reflected in the researcher's aim for rich and complex meanings via interpretive and inferential analysis (Creswell, 2009). A qualitative case study approach is employed, where one research-intensive university in the UK is selected as a case study. The data collection methods include document analysis and semi-structured interviews. The researcher employed referral and

purposive sampling for her recruitment of participants.

Data collection phase took place between July and October 2020, with an average duration of one hour per interview. The interview questions were developed from the research questions and following an in-depth literature review on the topic. Three sets of interview questions were developed for academic researchers and research professional staff from the upper and middle management team, respectively. In order to ensure the objectivity of the interview questions, they were peer reviewed by the researchers' supervisors and peers. A pilot interview was also conducted prior to the official interview in order to identify and rectify any issues that may arise from the questions.

The interview questions were grouped thematically into six categories: (1) perception of the external research environment; (2) perception of the institutional research environment; (3) perception of the role of research professional staff; (4) development and implementation of policies; (5) impact and value of research professional staff; and (6) factors influencing collaboration. There was minor variation in some of the interview questions in order to adapt to the different roles of each participant.

In general, participants were asked to provide their perception of the external and institutional research environment; reflect on the role of research professional staff in terms of its value, contribution and challenges; share their experiences of interaction with research professional staff and academic researchers; and provide their vision for the future and recommendations on improving the role of research professional staff. Participants were also offered the opportunity to report on issues and themes not covered by the interview questions. All interviews were conducted via the online video communication platform "Zoom" due to the ongoing COVID-19 pandemic which prevented the researcher from conducting face-to-face interviews. Audio recordings were made and transcripts of the interviews were sent to participants for the purpose of clarity.

Official published documents from the University's research support services were obtained as primary sources of data. These documents served to familiarise the researcher with the structures and priorities of the research support services and helped identify the preliminary themes. Consequently, it was used to corroborate statements provided by the interview

participants. The documents were analysed using inductive content analysis.

The researcher employed thematic analysis to interpret the data and generate themes. The Atlas.ti software was used to code, annotate, highlight, group and organise the interview transcripts. Inductive coding is a data analysis method which requires the reading and interpreting of raw and textual data to develop concepts, themes or a process model (Boyatzis, 1998; Corbin & Strauss, 1990). The objective of inductive coding is to allow themes to emerge from the raw data through iterative reading, interpretation and comparison (Cohen et al., 2011). Inductive coding was used to interpret the interview transcripts and documents. The theoretical framework was then used to discuss the findings. The researcher aggregated the codes into categories based on the interpreted meanings and subsequently generated the themes. Table 3 provides an overview of the themes and categories in this study.

Table 3

Themes and categories

Themes	Categories
Research context	• External environment • Institutional environment
Research professional staff role perception	• Skills, knowledge and attributes • Role perception • Role challenges (organisational, cultural and interpersonal)
Research professional staff policy implementation	• Peer review policies • Research impact policies
Academic perception of the role of research professional staff	• Expectations on the role of research professional staff • Perceived impact of research professional staff • Perceived added value of research professional staff • Perception and attitude towards research professional staff • Perception of the skills and knowledge of research professional staff

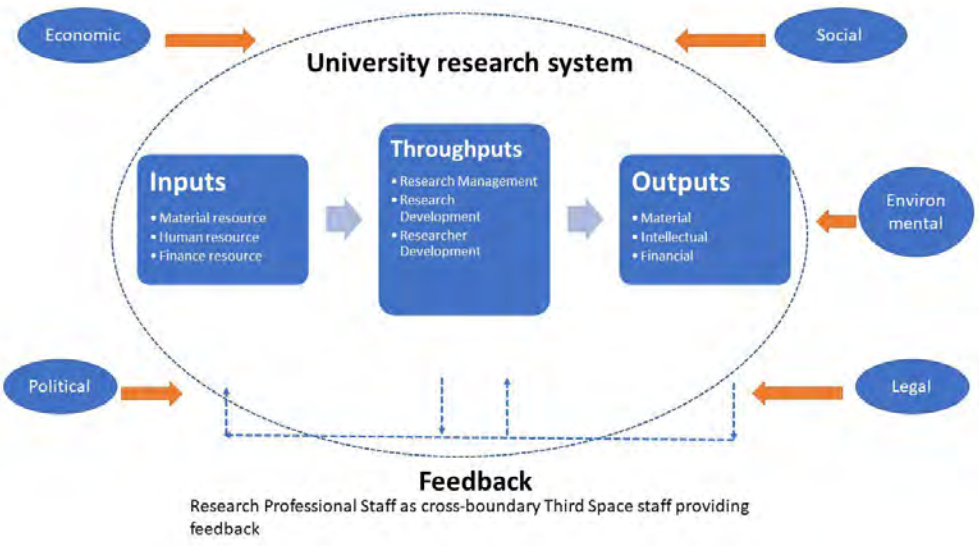
	• Academic recommendation on improving RPS role
Third Space	• Enabling and inhibiting factors affecting the collaboration between research professional staff and academic researchers

12.6 Key Findings

The data collection and interpretation process yielded the following findings. The *first research question* concerns the role of research professional staff in relation to their external and institutional research environment. Findings show that research professional staff perceive themselves to be operating in a changing external research environment, shaped by political (REF), environmental (COVID-19), economic (funding decisions), social (racial and gender issues) and legal drivers which are immediate, ongoing, and emerging in nature (Figure 1). Within the institution, research professional staff perceive themselves to be working in a hierarchical institutional environment, underpinned by a culture of credentialism.

Figure 1

The role of research professional staff in relation to the external research environment



Note: Figure created by researcher

The *second research question* concerns the approaches employed by research professional staff to implement institutional research policies. Findings show that research professional staff employed several approaches to implement institutional research policies. One of the

approaches relates to the need to cooperate and collaborate closely with academic researchers. This includes identifying academic researchers who can understand and advocate certain policies such as peer review and research impact. Another approach is to be transparent with the process of the research policy. For example, the peer review policy requires research professional staff to be transparent about the disciplinary background of the reviewers and to ensure that a robust review panel has been selected. Another approach concerns the need to share the values and know-how of the policy. For example, the research impact policy aims to educate and develop academic researchers' understanding on the means to translate their research beyond the realm of academia. Finally, the last approach relates to the need to develop effective systems which allow academic researchers to readily comply with a set policies. Overall, it can be said that research professional staff employ a constructive and collegial approach in implementing institutional research policies.

The *third research question* relates to the perception of research professional staff in supporting academic researchers with research. Research professional staff seem to hold a dual perception of their role. On the one hand, they are positive about the value and impact of their position. On the other hand, they are largely conscious of the contested nature of their responsibilities due to the mixed perceptions of academic researchers. They identified their role to be multidimensional, which includes being supportive, developmental and strategic. Throughout the interview, several "role identities" emerged - research professional staff see themselves as a "critical friend" and "trusted advisor" to their academic colleagues. Further, they recognised that the biggest impact and added value of their role are in areas such as research ethics and legislations, which may be blind spots for some academic researchers. The coaching and mentoring of early career researchers were also identified as one of the areas which they were able to contribute substantially.

Several organisational and cultural challenges were identified in the role of research professional staff. At the organisational level, there appears to be a lack of recognition and understanding of their role, especially by their academic colleagues. Furthermore, the constant change in staff personnel and the duplication of the roles of research professional staff have subsequently affected the quality of research support services delivered to academic researchers. Crucially, it was also reported that there is a lack of concrete approach in demonstrating and measuring the impact of research professional staff. At a cultural level,

research professional staff are aware that they are perceived as “servants” by some academic researchers. Furthermore, academic researchers tend to hold a sceptical view on their ability to support a subject discipline.

The *fourth research question* is focused on academic researchers perception on the role of research professional staff. Findings showed that academic researchers identified the role of research professional staff as being supportive especially in the technical aspects of costing research grant applications. They also identified research professional staff as having a horizon-scanning role to alert them with the latest research funding opportunities. Moreover, it was recognised that they have a project management role which includes overseeing stakeholders and ensuring the project is carried out within a set timeline. Most importantly, academic researchers perceived research professional staff as having a critical role in training and developing early career researchers with grant writing skills.

Several positive and negative “role identities” emerged during the interviews. One academic researcher described research professional staff as “administrators”, thereby echoing the negative sentiments attached to this role. Other academic researchers described them as their “sounding board” and “primary advisory group” connoting a more collegial relationship. In terms of the impact and value of research professional staff, there were mixed perceptions from the interviewees. The positive perception included an acknowledgement that research professional staff are highly knowledgeable about research funding requirements and the strengths and weaknesses of the research institution. Their ability to support academic researchers in advancing the university’s research agenda and creating a supportive research environment and culture were also identified as some of the key added values. Finally, their ability to provide critical feedback and to keep academics on track were also perceived to be extremely impactful. The less positive aspect concerns the lack of efficiency in processing research applications and a focus on bureaucratic and administrative matters such as “form-filling”.

The *fifth research question* examines the factors influencing the collaboration between research professional staff and academic researchers. The first enabling factor point towards having a mutual understanding and recognition on the role of research professional staff. It is important for academic researchers to initiate the first engagement with research support

services in order to facilitate this process. The second enabling factor is to identify a shared goal and purpose between research professional staff and academic researchers. At times, there are different levels of involvement and collaboration between both groups of staff. Therefore, having a concrete framework which clearly defines the academic expectations on the research support service will assist research professional staff in adapting their service and communicating the strengths and value that they can provide.

Several inhibiting factors which influence the collaboration between research professional staff and academic researchers were identified. The first inhibitor relates to the lack of recognition and understanding on the role and value of research professional staff. This often leads to lower engagement and uptake of research support services. Second, a lack of clear understanding of the role is often due to poor signposting and communication of the research support service. Thirdly, resource constraints is one of the contributing factors which reduced the collaborative opportunities for research professional staff and academic researchers, in the sense that not all academic researchers were provided with equal support.

Overall, the findings from this study revealed that the role of research professional is becoming increasingly multidimensional, which includes elements of being supportive, strategic and developmental. There is a discernible shift on the role of research professional staff from performing a purely administrative role to a more strategic and advisory one. Furthermore, the findings also illuminated prospective areas in which research professional staff are able to contribute substantially, i.e., the coaching and mentoring of early career researchers. Whilst this shift presents several opportunities, research professional staff are constantly under pressure to portray themselves as credible, competent and confident individuals in an academic-dominant environment.

In terms of the academic-research professional staff relationship, this research showed that there are several cultural and organisational barriers that prevent academic researchers from understanding and recognising the added values of research professional staff. Whilst some research professional staff and academic researchers share a constructive and collegial working relationship, they are the minority and the hierarchical culture has only further polarised the relationship between academic researchers these groups. One of the enabling factors identified using the Third Space theory is the need for research professional staff and

academic researchers to find a common ground – in identifying the academic and institutional research goals and the support needed to achieve these goals. This would require a concrete approach in constructing a framework of engagement – academic researchers need to articulate their expectations for research support while research professional staff need to demonstrate their strengths in helping academic researchers achieve their research goals.

12.7 Recommendations for future research

This study employed a case study approach using a research-intensive university in the UK, with a focus on the roles of research professional staff and their collaboration with academic researchers. The methods and findings from this study can be adapted for future research. To increase the generalisability of this research, future studies may select multiple research-intensive universities to form a multi-case study in order to illuminate patterns and trends on the role of research professional staff. Further, this research may have better generalisability if it included research professional staff working at the faculty level and a larger sample size. This will also help us understand if there are any differences in the way research professional staff at the faculty level collaborate with academic researchers, and vice versa.

The findings from this study showed that there are organisational and cultural barriers which inhibit the collaboration between research professional staff and academic researchers. Further studies can be conducted to examine if the career stages, skills, experience and knowledge are some of the underlying factors affecting collaboration between both groups. This can help research managers better plan their human resource allocations.

This study employed Systems theory and the theory of Third Space to delineate the roles of research professional staff and their relationship with academic researchers. As discussed above, Systems theory is limited in conveying the contextual and intricate details of the roles of research professional staff. Future research may consider employing mid-level theory such as strategic management to identify the ways in which research professional staff may anticipate, plan and organise their workload to deliver a more effective service for academic researchers. In terms of the academic-research professional staff relationship, Third Space was used to contextualise the role of research professional staff working in a shifting institutional environment. Social network theory, the study of how people, organisations or

groups interact with others inside their network, can be used to provide a broader view of the academic-research professional staff relationship and its subsequent impact on work efficiency.

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13 The success factors for the development and implementation of a digitalization strategy in the HEIs.

Panourgias Papaioannou

13.1 Statement of the Problem

There are some studies that are researching the need of introducing digitalization in the field of higher education, but these can be either too specific or their results cannot be generalized in a broader context. With the current study, an insight on the factors for the development and implementation of a digitalization strategy are going to be explored. This study is going to be unique on its field since it is going to emphasize in the German University of Applied Sciences of Osnabrück, but also try to set general guidelines that the universities within the European Union and abroad can follow. The thesis is of importance both to the students and the university personnel. By researching the success factors of a digitalization strategy and its implementation to the University of Applied Sciences in Osnabrück a base will be set so as the universities to create successful strategies and for the students to learn for the flexible learning pathways and the opportunities offered in this digitalized well-connected word.

13.2 Research Questions

What are the success factors for the development and implementation of a digitalization strategy and how successful is the University of Applied Sciences Osnabrück?

Sub- Research Questions:

1. What is a digitalization strategy and what are the steps of strategy development and implementation?
2. What are the success factors for the development and implementation of a digitalization strategy?
3. What are the strengths and weaknesses of the UAS Osnabrück regarding the success factors?
4. How could the UAS Osnabrück improve?

13.3 Theoretical Background

Strategy development and implementation in a Higher Education Institution are important parts of strategic planning. As Hill and Hoskinson (1987) underlines strategy development and implementation is a big challenge for many organisations and it has been closely linked to the performance of the organisation. The strategic development and implementation should be done in a right way so as the organisation to gain significant competitive advantage and outstanding among the rest (Noble, 1999).

So as to achieve this competitive advantage the universities can use different change management models. There are several that can be used like Kotter however the one that is closer to what it needs to be examined is the McKinsey 7S framework. The McKinsey 7S is a framework that requires that several conditions should be fulfilled in order to ensure success in the development and implementation phase. This process consists of 7 steps and in the paper, we will examine if these are applied in the UASO. The steps are skills, strategy, values shared among staff and style.

13.4 Methodology

This thesis was conducted with a qualitative case study. The choice of the qualitative research methodology was based on the nature of the research questions. Strauss and Corbin (1990) mention that explorative studies like this research ought to use qualitative methods. The research is opening the question so as to explore the success factors for the development and implementation of a digitalization strategy instead of measuring the impact of an implemented strategy. Furthermore, the theoretical frameworks are used so as to be a validation base for the paper. The main focus is given on understanding how to develop and implement a digitalization strategy in a Higher Education Institution by reading the relevant documents and exploring the statements of the interviewees. Setting a quantitative research at this stage for the Osnabrück University of Applied Sciences would have been early since the digitalization phase is currently being developed.

13.5 Key Findings

Firstly, and as far as the structure is concerned, we can identify that there have been different

viewpoints expressed from the different stakeholders. Starting from the paper draft on digital transformation it is underlined that digitalization is not an end goal by it-self and that the university urges all the students, staff and professors to participate and shape digitalization together. The university has a mission, and it will remain a university of applied sciences that offers on-site courses. It adds that all the measures that are taken prioritize the users of the services given but also take into consideration the costs. Three big areas linked to digitalization have been identified and these are teaching and learning, research and transfer/ societal engagement. A central role on the promotion of the actions linked to digitalization play the Vice-President for Digitalization and the representative of the Department (Ressort) digitalization who assist on the processes proposed.

On the teaching and learning part an emphasis on the introduction of the “future skills” is made and that blended-learning formats and structures should be established. For the research part research on digitalization should be intensified and the research results should be communicated to the outer world. Then services linked to the university as the student enrolment but also the payroll of the staff should be completely managed online.
These facts are mentioned so as to indicate to the reader the overall plan of the university of applied sciences and its main areas of activities based on the written papers linked to digitalization.

There is a clear structure that underlines the three areas that are of focus to the institution. The plan is clear and there is a top-down approach as it is designed from a member of the presidency however on the papers it is also stated that the feedback and the active contribution of the employees is well-perceived and requested. On the paper all the relevant stakeholders are identified as it is the eLCC, the ZeMIT, the Learning Center, the Departments (Ressorts), the Working groups (Arbeitsgruppen), the committees (Gremien). All these consist active parts of the digitalization strategy and every action taken is being designed so as to serve the needs of the stakeholders. On the paper the importance of connecting and sharing the feedback is clearly underlined. But how the evaluation circle is being done, is not clearly stated in the documents of the institution.

Moreover, and heading to the findings of the interviews it was early enough realized that the institution took enough measures so as to look for and fill in the gap skills of all of its

personnel. This change is not only limited to the current period. As a representative of the IT department underlined, we “feel that the institution is taking the turn to the digital era really seriously”. The LearningCenter along with the eLCC was the info point for all the opportunities that it was offered from the institution. The professors had arranged meetings with representatives of the IT for the learning management system while the IT itself and the committee (steuerkreis) of IT actively assisted on the selection process of the M365.
In addition, they have underlined that within the working group of teaching and learning the skills that need to be developed are discussed and feedback is given once a new training is introduced. The evaluation though is not done” within a systematic framework but rather in a personal note” as the representative of the Learning Centre underlines. The student also felt that the feedback process was not unified within the institution. Moving on to the short transition to online learning the following skills should have been taken more into consideration. These are: time management skills as the interviewees say. Students, professors and administrative staff had an excessive workload and time was not easily manageable with extra burden been set on them. Moreover, the inter-personal skills were identified as an area that should be enhanced by the professors, the student and the administrative staff. On this area the members of the presidency underlined that a more enhanced communication way was introduced by sending several newsletters. Finally, the representative of the eLCC underlined that more opportunities for lifelong learning should be given based on the needs of the people and that they are actually trying to work on it.

13.6 Recommendations:

1. Establish a digital evaluation framework in the university.

2. Clearly communicate the vision about the digital transformation to the members of the university.

3. Explain the role of the department (ressort) on digitalization and how it can contribute on receiving and evaluating the feedback of the proposed actions.

4. Set a digital hour where the stakeholders can interact with the members of the presidency. This promotes the feeling of respect, openness and commitment.

5. Establish the operational framework on digital transformation (digitalization).

6. Open the floor for contribution towards the Osnabrück University of Applied Sciences after the end of the digital semester.

7. Use the newsletter so as to promote the actions of the eLCC, the learning center and ZeMIT.

8. Communicate the actions taken to external stakeholders so as to promote cooperation.

9. Point out the digitalization efforts to the public for instance by making public the guidelines on the digital transformation.

13.7 Acknowledgement:

I would like to say a big thank you to my family. They supported me from the very first day of the MARIHE program. I owe them a lot and I couldn't have been this person that I am without them. Thank you.

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14 Exploring Pathways to Innovation and Entrepreneurship in Georgian Higher Education Context

Nino Popkhadze

14.1 Background

It deserves an ode to describe how resistant and flexible are universities at the same time. There have been several references to describe its unique nature. “Foreign ministries, universities, and cemeteries are notoriously hard to move – in part for the same reasons “(as cited in Gornitzka, 1999, p.11), this remark from Maurice A. East describes well the resisting nature of universities.

It is worth noting, that higher education institutions have been in turbulence for a while already and the rhetoric of university adaptation is hardly a novel matter. Almost 20 years ago, Sporn (1999) explored the concept of adaptive universities and she analyzed environmental pressures that affected institutional responses, such as globalization and international competition, scarcity of financial resources, shifting demographics, information technologies, and changing role of the state. In the same period, Martin and Etzkowitz (2000, pp.9-11) also drew attention to environmental factors that would affect university modality, such as threats to autonomy, changes in knowledge production, technological advances, globalization, emerging lifelong learners, focus on applied skill, the phenomenon of publish or perish. To address all the challenges and become “super universities,” they need to take a non-linear path that is closely and densely intertwined with stakeholders.

A comprehensive study about entrepreneurial universities by Rothaermel et al. (2007) showed that environmental context plays a major role and university entrepreneurship is embedded in the networks of innovation. Although the topic is very pervasive and omnipresent, still economic, cultural, and geographical context matter for many reasons, especially when it comes to innovation and regional development. Economic development and culture may significantly impact the entrepreneurial path and patterns of the university (Rothaermel et al., 2007, p.777). A fairly large number of publications has studied entrepreneurial universities

and their innovation path in the United States or Europe, despite the popularity and widespread attention of the topic, still little is known beyond Europe and the USA. Pinheiro (2016, p.303) highlighted the importance of local relevance and the necessity to inquiry how the "global script" of entrepreneurial universities is translated, adopted and adapted in local circumstances.

14.1.1 Research Purpose and Questions

The information about entrepreneurship and innovation in the Georgian higher education system is very scattered among different laws and strategy documents, which makes it difficult to provide a robust account. Thus, the gap calls for a situation review and in-depth analysis. Since universities from developing countries and their entrepreneurial activities are not under the same spotlight as universities from developed countries, subsequently less is known about this matter, and it needs to pay greater attention. Therefore, the purpose of this thesis has twofold nature, the first one is to shed light on innovative and entrepreneurial activities in the Georgian higher education context. And the second one is to bring forward and enable discussion by tracing existing potential and respective challenges in Georgia. For this purpose, special attention will be paid to inquiry how HEInnovate tool can be tailored for Georgian higher education context.

- What is the current situation regarding the innovation and entrepreneurship in Georgian higher education context?

- What are current challenges and opportunities for Georgian higher education institutions to innovate and pursue entrepreneurship?

- How could the HEInnovate approach contribute to the higher education system in Georgia?

14.1.2 Transformation, Entrepreneurship & Innovation

The universities as we know today, have changed their mission, purposes, and targeted audience over time. It is worth noting that as Kerr (2001) described, the universities have emerged as a single community of masters and students, whereas the main idea was to

transfer the knowledge since this phase university transformation has caused ambivalent attitude among scholars and the public. Each phase of university transformation had its guardian, for instance, Newman believed that “the idea of a university” was training and teaching liberal studies, for Flexner it was the pure research, and for Kerr, it was the place for multiple purposes, known as multiversity (Scott, 2006, p.3).

The entrepreneurial paradigm in higher education stemmed from different environmental factors and contextual change. Clark (1998) started the discussion about “The Demand-Response Imbalance” 22 years ago and he speculated that demands and expectations on university would outrun their capacity to respond. According to Etzkowitz, the process of becoming an entrepreneurial university is fairly natural, he perceived it as a part of its evolution and further stage of its development (Etzkowitz, 2013). The emergence of entrepreneurial universities has several effects not only on the institutional level but also on the conception of the university itself. According to Clark, five constituents of Entrepreneurial Universities are a strengthened steering core; an expanded developmental periphery; a diversified funding base; a stimulated academic heartland; and an integrated entrepreneurial culture.

Lundvall (2010) described a national system of innovation as a dynamic social system, which consists of different elements and their relationships. From 19th century onwards, science became important as it was tied to national prestige, service of war, and economic growth. Wagner (2018, p.6) compares the current phase of science as “a fourth metamorphosis in the twentieth-first century”, which is characterized by global networks and transdisciplinary interaction. One of the major concepts reflecting the practical role of the science was the concept of Mode 2 research developed by Gibbons et al., in 1994. The Mode 2 research portrays the idea that research should be carried out in the context of the application and it should be socially accountable and reflexive. Yet another important concept that was initiated in 2000 was the Triple Helix model, it denotes the dynamic interaction among government, industry, and universities to achieve synergy (Etzkowitz & Leydesdorff, 2000). Carayannis and Campbell (2012), introduced add-on concepts of Mode 3 research and Quadruple-Quintuple helices.

When it comes to commercialization and expectation that research universities should be the

drivers of economic growth, it is noteworthy that having a technology transfer office, doesn't make output by itself, some mutually exclusive conditions create synergy in terms of innovation and entrepreneurship, which contributes to the local economy. According to Feldman and Desrochers (2003, p.5), factors as the university founding mission, institutional context, academic culture, and prior experience with commercial activity affected university-industry interaction and capacity to impact the local innovation ecosystem. Besides, attributes of the region play a great role in spillover absorption, such as industrial composition, characteristics of the labor force, and social capital variables (Feldman and Desrochers, 2003, p.5). This reinforces the importance of context and geography of higher education.

14.2 Methodology

The title of the thesis suggests that the study has explorative nature, as there is little know about innovation and entrepreneurship in the Georgian higher education context. Thus, to explore the pathways, the study will analyze few universities in Georgia. Taking into consideration the research problem and the approach, the study favors the qualitative research method, as it carries various characteristics of the qualitative research, such as collecting, analyzing, and interpreting data (Creswell, 2013). Additionally, this paper tries to get data from words rather than numbers and it aims to answer the question of what the current situation in Georgia is and what are the challenges universities face in terms of innovation and entrepreneurship, thus it can be easily categorized under the qualitative research method according to Frankel and Wallen (2009). The data collection was organized through analyzing documents and interviewing participants and aimed to learn about the views of the respondents and assess the process. This study could have been developed by choosing the mixed methods as well to get a bigger picture, but given the time constraint, the qualitative research method corresponds the best to the purpose of the paper.

The qualitative research approach of this paper is a case study. The rationale behind is that case studies can analyze situations and phenomena in ways, which are not always possible by numerical data (Cohen, Manion & Morrison,2007). As Yin (2009) notes down, case study can be applied in many situations to understand complex social, political or organizational phenomena. Also, it allows the researcher to understand the various contexts better, deeper and much more broadly (Cohen et al, 2007). The case study makes it easier to approach and

focus thoroughly on one or several cases, which is a convenient approach at this phase, and it can provide a more or less holistic overview of the phenomena. Nevertheless, it has to be mentioned that the research questions represent "what" and "how" types of questions, whereas the former has exploratory nature, and the latter one is more explanatory. Thus, as Yin (2009) explains, for "what" questions many types of methods could be applied, such as surveys, case studies, experiments, for the "how" questions, case studies, experiments or histories are more appropriate. According to Clark, when there is an interest to probe complex organizations and determine how they change, the case-study approach is one of the most powerful methods, its findings lead to understanding and contextual use (Clark, 2004). Therefore, using Yin's (2009, p.18) technical definition as a guiding foundation, this research is an empirical inquiry to investigate the contemporary phenomena (innovation and entrepreneurship) in-depth and with real-life context (in Georgian higher education context).

Besides, the researcher used the scenario planning technique to transit to the recommendations section. As Martin (1995) describes, foresight helps to systematically look into future and has unique visionary feature, and scenario planning is considered as one of the methods. Scenario planning technique has been actively applied by practitioners and academicians to facilitate strategic planning and deal with a broad spectrum of uncertainties (Martin, 1995; Schoemaker, 1995; O'Brien, 2003; Iversen, 2006; van't Klooster & van Asselt, 2006; Ejdys et al., 2019; Leitner et al., 2019; Stolze & Sailer, 2020). Besides, the researcher believes that it allows to express creatively and think out of the academic box. This method of reflection aims at providing images of the future and organize multidimensional information about future possibilities into storytelling.

14.3 Key Findings

In reviewing the literature, several theories and concepts have been highlighted, such as Triple Helix theory (Etzokiwtz & Leyderstorff, 2000) and its application to stimulate innovation on national levels, Mode 2 research (Gibbons et al., 1994) to sync society and science, and Clark's Entrepreneurial University which often is used to explore the entrepreneurial capacity of higher education institutions. The results suggest that none of these concepts seem to be relevant at present. Nevertheless, the weak interaction among state, university, and industry implies that Triple Helix application at initial state is present. And for what it is worth,

innovation and entrepreneurship are held in high esteem, at least on paper.

The first research questioned intended to shed a light on the current situation regarding innovation and entrepreneurship. Extensive document and interview analysis prove that innovation has been recently regarded as an important political domain. Thus, it can be summarized that innovation and the entrepreneurial ecosystem are at a rudimentary stage, but it exhibits potential for becoming a fast-growing segment. The willingness from the state is declared through different strategy papers, although a tangible plan is missing. Therefore, recommendations will try to pave the way for better decision making, otherwise the system might keep running in circles. As for the universities, they have a long way ahead to position as flagships for economic development. Nevertheless, strengthening the focus on applied research, both from funding donors and universities, could be a great starting point for societal engagement. Regarding the concept of "Entrepreneurial University", higher education institutions lack the capacity for managerial steering, especially public universities; funding base is not yet diversified, although entrepreneurial teaching and learning have started to be integrated into curricula, and auxiliary centers are opening up which will affect the entrepreneurial culture eventually.

The second research question aimed to probe the challenges for Georgian higher education institutions to innovate and pursue entrepreneurship. Similar challenges were reported from the documents and interview analysis. Overall, the results indicate that there is a logical sequence among the identified challenges, which were clustered together under four umbrella terms: context, Funding, STI management, and Legal & Procedural framework. They are all interconnected and most of them are mutually inclusive for the system. Hence, it is important to take measures holistically, especially when existing challenges are not brand new.

Table 1
Clustered challenges. Author's interpretation

The third research question tried to examine grounds to introduce HEInnovate tool for institutional development. Two divergent discourses emerged from Georgian and international respondents. The former welcomed the idea of using the tool for assessing and mapping institutional capacity, while the latter seemed more reluctant and emphasized the power of context and culture in building and accelerating the ecosystem. Although all participants agreed that online tool application in different context takes a great deal of tailoring and customization.

As a bottom line, the study did not focus on pandemic and its ramifications on Georgian higher education per se, although participants referred to it. Despite the plethora of problems and footprint Covid-19 brought (access to the internet, access to equipment, adaptation, and so on), its disruption can be seen as a silver lining to shift the mindset and to domesticate concepts, such as innovation, digitalization, distance learning, and so on.

	Geography of HE/ Context	Funding	STI Management	Procedural Framework
Challenges	Post-Soviet Legacy	Low expenditure on R&D	Outdated infrastructure	Poor Data Governance
	Shift to the mindset	Lack of Business participation	Underemphasised Applied Research	Lack of Cross -sectoral collaboration
	Top - down approach	Financial autonomy and sustainability	Dispersed research capital	Inflexible procedures
	Risk-averse culture	Outdated Funding model	Vulnerable Merger	Legal Framework

14.4 Recommendations

This study intends to serve as the basis for policy discussion in Georgia, thus offered recommendations exhibit the synthesis of identified challenges and resources to complement existing endeavors for better optimization. The paper presents five recommendations: 1. Joint Application; 2. Network Governance; 3. Seat at the table; 4. Championing Open Science; 5. Plea for Data-informed Governance.

The study intended to cast light on innovation and the entrepreneurial ecosystem in the Georgian higher education context. The researcher believes that in given context and capacity, the study gathered quite significant information. Although, the interesting observation from the researcher is that more respondents she interviewed, more information was coming up on the surface, which was not apparent from the start. That leads to the importance of the holistic review of the national situation. To have a practical guide to building innovation and an entrepreneurial ecosystem, there has to be a clear account of the status quo.

It is believed that this study could serve as the basis for policy discussion and future inquiry, but it is not enough to pave the way for radical changes. The researcher tried to connect the dots from governmental agencies and universities, however as it was stated under the limitations, the sample was not large to generalize findings in terms of university. Besides, the study did not involve representatives of small and medium-sized enterprises. It is deemed critical to study the current R&D context which illustrates the strengths and weaknesses of the respective sectors and enables further development. The ways to conduct the survey and explore the pathways could be different and heterogeneous, for universities HEInnovate tool could be customized and relevant dimensions selected to assess the baseline among all universities, and UNESCO's practical guide to survey R&D can be applied and adapted. There are multiple ways to review the context if there is a will to do so.

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15 Are Peruvian Universities ready for the Future? Assessing Entrepreneurial and Innovative Capacity in Peruvian Universities using the HEInnovate's Entrepreneurial Universities Framework

Viviana Cassandra Rojas Rivera

15.1 Introduction

This study focuses on assessing the "future readiness" capacity of three Peruvian Higher Education Institutions under the Entrepreneurial University's framework adapted by HEInnovate.

15.1.1 Background of the study

One of the major issues being studied today within the Higher Education context is how the concept of "The Future of Work" is already transforming and forcing Higher Education institutions to rethink their own nature and essence. While there are numerous implications being brought to the table by this paradigm shift and the Fourth Industrial Revolution, issues such as Employability, the existing Skills Gap between Academia and the labor market, and Digitalization stand out among the most pressing matters, especially for their implications on the relevance and sustainability of the Higher Education system (Selingo, 2017a). In addition, the COVID-19 outbreak represents a special urgency factor for the need for systemic change, not only in the education sector but also in the nature of work and practically all aspects of daily life (UNESCO, 2020).

In this context of uncertainty, higher education institutions, despite their complex nature, face the challenge of becoming agile, adaptable (Selingo, 2017a), and above all, capable of ensuring their survival in an autonomous way while assuming a responsibility to generate positive impacts on their societies. Given this, the way forward that best fits these needs is for higher education institutions to become entrepreneurial (Wain, 2018). As Gibb (2013) rightly mentions:

"Entrepreneurial higher education institutions are designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit and use of knowledge across boundaries. They contribute effectively to the enhancement of learning in a societal environment characterised by high levels of uncertainty and complexity and they are dedicated to creating public value via a process of open engagement, mutual learning, discovery and exchange with all stakeholders in society - local, national and international." (Gibb, 2013)

15.1.2 Research gap and research purpose

As mentioned above, it is indisputable that there is an urgent need for transformation for HEIs at a global scale; nonetheless, the changes that the Fourth Industrial Revolution is bringing to the axes of the labor market, higher education and professional skills are not occurring the same way in all geographies (Shwab, 2019). Whilst there is much research being done on this topic, most of it is focused on the higher education contexts of the USA and Europe (the so-called 'Global North'), and few are focused on the Latin American context. Moreover, almost none of this research is situated in the Peruvian context of higher education, which is very different from those mentioned above, as it has been undergoing major important changes since 2014 (the year in which the Peruvian University Reform came into effect), especially in terms of demand growth and quality assurance in higher education (SUNEDU, 2018).

Given the fact that in 2019 Peru has reached its best historical score in competitiveness according to the World Economic Forum, it is curious to observe that although its pillars of innovation capacity and entrepreneurship culture have an increasing tendency, the pillar of professional skills presents a decreasing tendency, particularly in the fields of quality vocational training, skills of graduates and digital skills among the active population (Shwab, 2019). Bearing this in mind, it can be inferred that there is an important improvement opportunity for Peruvian higher education institutions (HEIs) in terms of ensuring the qualification and readiness of their students and graduates for the labor market, and the question arises as to whether Peruvian universities are prepared to educate the professionals of the future. Moreover, the COVID-19 outbreak has added a special sense of urgency to this matter, due to the effects it has had on the Peruvian society, work, and economy, where it has become painfully evident that Peruvian Education institutions need to face an imperative

transformation, for which most of them are probably not suitable yet. With this, an opportunity window opens where research in the fields of Entrepreneurial Education and Entrepreneurial Culture within the Peruvian Higher Education field become more relevant than ever before. It is worth noting that until the day this research started, there were no previous studies on the Entrepreneurial Capabilities of Peruvian HEIs and no data about any Peruvian HEI in the HEInnovate assessment tool, to the point at which the author of this research had to ask the HEInnovate team directly to add Peru to the list of eligible countries because it did not even appear.

In order to address this gap, this qualitative case study aims to accomplish two main objectives:

a) to assess Peruvian universities' current Entrepreneurial capacity to adapt and tackle potential future challenges, especially related to 21st century Skills Development, Employability, and Digitalization; and
b) to provide recommendations for improvement based on the analysis of the results.

15.1.3 Research questions and structure

The main question guiding this study is:

- To what extent can Peruvian universities be considered entrepreneurial and ready for tackling the Challenges of the Future?

Under this main question, for sub-questions are addressed:

- How do Peruvian HEIs rate in Entrepreneurial Capacity according to the HEInnovate framework?
- What are the factors supporting or preventing Peruvian HEIs to accomplish their entrepreneurial potential?
- What efforts are Peruvian HEIs making for developing 21st century skills, enhancing their students Employability, and accomplishing Digital Transformation?
- What measures could Peruvian HEIs take in order to maximize its entrepreneurial and future-proof potential?

15.2 Challenges affecting Higher Education's future

a) The Future of Work and its effects in Higher Education

The changing nature of work is "the defining economic feature of our era", according to former Treasury Secretary and Harvard University president Lawrence Summers (Selingo, 2017b). During the last years, the world of work has been changing massively. Entire occupations and industries are expanding and contracting at an alarming pace, and the skills needed to keep up in almost any job are increasingly churning at a faster rate (Selingo, 2017b). A large number of studies have been carried out in recent years in the context of the "Future of Work". However, despite a growing research in this area and despite the intensity of the debate, no commonly accepted vision on the future of work has yet been established. Nevertheless, most publications highlight the impact that the Fourth Industrial Revolution might have on the labor market (Balliester, 2018), more concretely, the impact of technology on automation and the rise of the gig economy are identified as two of the major megatrends that will revolutionize the future of work and skills.

b) The Skills Gap

As the cost of postsecondary education has risen, its real value in the workplace is increasingly questioned as employers report having trouble finding qualified candidates for open positions (European Commission, 2017). This can be linked partly to a mismatch in credentials being earned versus those being sought after by employers, as well as outdated skills being taught for sought-after credentials (European Commission, 2017). According to a report published by Deloitte in 2018, the core 21st century skills needed for the Fourth Industrial Revolution can be grouped into 4 categories: 1) workforce readiness, 2) soft skills, 3) technical skills, 4) entrepreneurship. And the teaching and training methodologies to acquire them are team-based, project based, practical application, experiential, case simulation, business exposure, job shadowing, mentorship and coaching.

c) The Employability Issue

As research shows, the goal of obtaining a postsecondary degree for many students is to provide them with the necessary tools to thrive in the labour market (D2L, 2018). While a post-secondary degree is still proven to be a career asset, the current level of disconnect between

what employers want versus what is being taught must be addressed (McKinsey 2013). A report conducted by Deloitte in 2018 points out the barriers that youth has reported for getting the skills they need for the job they want. Among these barriers, “no opportunities” and “no relationships with employers” stand out among the most cited (Deloitte, 2018), and traditional universities are not giving them the tools to overcome them, therefore, a different approach is needed.

d) Digitalization

It is widely accepted that Digitalization, and more concretely, Digital Transformation is changing the job market and requiring new skill sets. Digital technologies offer new ways of learning and, to reap their benefits, education and training systems need to respond better to these changing realities (European Commission, 2016). This change is challenging for traditional HEIs at all levels. Therefore, building the capacities for successfully driving through the Digitalization process is crucial not only for ensuring HEIs future and sustainability, but to secure that HEIs continue having a relevant role in the betterment of their communities.

e) COVID 19 in Latin America

The overall impact of COVID-19 has been particularly complex in regions such as Latin America and the Caribbean, exacerbated by weak social protection structures, fragmented health systems, and deep inequalities (UNITED NATIONS, 2020). Taking all of this into account, there is no doubt that this pandemic has infused an additional sense of urgency and complexity for the transformation of Higher Education, especially in Latin America, where the shift to virtual education has been a struggle given the region’s little technical infrastructure and instructional support to move online, its high inequality rates, and the region’s private HEIs high dependence on tuition fees (Bothwell, 2020).

15.3 Theoretical Framework

The changes and challenges brought about by the Knowledge Economy induced a new transition for universities and higher education institutions in general. This was defined as the second academic revolution, the one that expands the purpose and function of higher education adding the pillar of Socio-Economic Development as the third mission of universities (Etzkowitz & Webster, 1998). It is in this revolution that the concept of the Entrepreneurial

University appears, with a focus on the role and responsibility that Higher Education has on generating positive societal impact, especially given the world's current challenges.

15.3.1 What is an Entrepreneurial University?

An Entrepreneurial University is, or should be, the normal model of a university in an Entrepreneurial Society. An Entrepreneurial Society refers to places where knowledge-based entrepreneurship has emerged as a driving force for economic growth, employment creation and competitiveness in global markets (Audretsch, 2007). Doh (2012) refers to the role of entrepreneurial universities in developing countries as active actors in combating poverty within their societies following the Quadruple-Helix model of innovation. Doh sustains that universities in developing countries could make meaningful contributions to sustainable socio-economic development by actively engaging with the rural community and other less formal and smaller groups in the society. As it is usual with relatively new concepts, there is still not a single one-size-fits-all definition of what is an Entrepreneurial University (EC & OECD, 2012); however, for the purpose of this study the model proposed by Clark (1998) has been considered as the theoretical basis.

Within this model, an Entrepreneurial University has 5 elements: 1) the "strengthened steering core" which responds to the administrative backbone that must embrace both central managerial groups and academic departments (Clark, 1998); 2) a "stimulated academic heartland", which corresponds to a motivated academic and student staff towards change and entrepreneurialism; 3) "the expanded developmental periphery", which purpose is contributing to organizational sustainability, while at the same time embracing the relevance of the institution to external stakeholders (Diriba, 2016); 4) "the diversified funding base", which represents a prerequisite for autonomy and adaptability, provided that the state has proved over time that it cannot be completely relied upon for financial needs of universities especially in the face of economic volatility (Diriba, 2016); and 5) "the integrated entrepreneurial culture", which means setting a climate in which entrepreneurialism is embraced at all levels in the university (Clark, 1998).

15.3.2 The HEInnovate Framework

In order to promote entrepreneurialism in HEIs, the European Commission's DG Education

and Culture together with the OECD created the HEInnovate self-assessment tool. The framework of the tool came from the need to define and identify the concepts and characteristics of entrepreneurial HEIs in a way that could be applicable to all HEIs.

The HEInnovate assessment was chosen as the final guiding framework for this study because in contrast to Clark's model, in addition to the elements of an entrepreneurial university it also includes the dimensions of "Digital transformation capabilities" and "Entrepreneurial teaching & learning" (OECD, 2013), which have direct correlation with the challenges of the future that have already been described earlier in this paper. Overall the framework has 8 dimensions: 1) Leadership and Governance; 2) Organizational Capacity: Funding, People and Incentives; 3) Entrepreneurial Teaching and Learning; 4) Preparing and Supporting Entrepreneurs; 5) Digital Transformation Capability; 6) Knowledge Exchange and Collaboration; 7) The Internationalized Institution; and 8) Measuring Impact.

15.4 Research Methodology

15.4.1 Research Design

This research is a combination of a literature review of the current global trends affecting HEIs future and a case study of three Peruvian universities.

15.4.2 Sample Selection

A characteristic of qualitative research is to present multiple perspectives of individuals (Cresswell, 2012), therefore the sampling type for this study will be purposeful sampling separated in phases. Maximal variation sampling for the first phase of the research, after the literature review, and confirming and disconfirming sampling for the second phase.

The sample is conformed by different stakeholders from three Peruvian universities. The universities were chosen for two reasons: 1) the researcher's access to information and 2) the different characteristics of the universities. A traditional, non-profit, long-standing and highly renowned Comprehensive University (CU), which was studied at the university level and also at the level of the Faculty of Business (CUB), and two for-profit universities, younger and with a more modern perspective: a University of Applied Sciences (ASU) with a focus on business-

oriented careers and a Creative University (CreU) with a focus on creative careers. In order to reduce the bias and to make the assessment more accurate and comprehensive, the author decided to select representatives from the different groups of interest of each university. Then, the points of view of professors, students, administrative staff, researchers, heads of department, faculty and rectorship of each of the chosen universities have been collected. The total number of people who have participated in this research is 50.

15.4.3 Procedure of Data Collection

The data for this study has been collected in three phases. The first one is the document analysis of existing literature and current global reports about the challenges affecting Higher Education's future, meaning the Future of work, the Skills Gap, Employability, Digitalization, and COVID-19. The second phase consisted in the completion of the HEInnovate assessment on the eight dimensions of an entrepreneurial university for each of the selected institutions. The third phase consisted of in-depth interviews with selected key players from each university, and its aim was to better understand the rationality behind the assessment's results.

15.4.4 Data Analysis

The data analysis strategy used in this research is a mix between quantitative analysis and qualitative content analysis. The quantitative results were automatically retrieved using the HEInnovate platform, which gives a detailed view of the score each university got for all the eight dimensions of analysis; additionally, the author also made some crossings to gather specific information. These results helped to answer the research sub-question "How do Peruvian HEIs rate in entrepreneurial capacity according to the HEInnovate framework?".

For the qualitative phase, the method for data analysis was the six-step process proposed by Creswell. First, collecting and organizing the interview videos into two level categories; the top level category is which university they represent, the sub-category is which role they play within that university. Second, uploading the interviews to the software Atlas.ti. After that, listening them so as to gain a general sense of the material and the main ideas. Then, the process of coding the data started. Descriptions were added to the codes, and seven categories were created:

- Factors limiting the Entrepreneurial Potential
- Factors supporting the Entrepreneurial Potential
- State of Entrepreneurship and Innovation in the university
- Efforts for 21st century Skills Development
- Efforts for enhancing student's Employability
- State of Digitalization in the university
- Ideas for ideal scenario

Finally, these categories formed themes to give answers to the research sub-questions a) What are the factors supporting or preventing Peruvian HEIs to accomplish their entrepreneurial potential? b) What efforts are Peruvian HEIs making for developing 21st century skills, enhancing their students Employability, and accomplishing Digital Transformation? c) What measures could Peruvian HEIs take in order to maximize its entrepreneurial and future-proof potential?

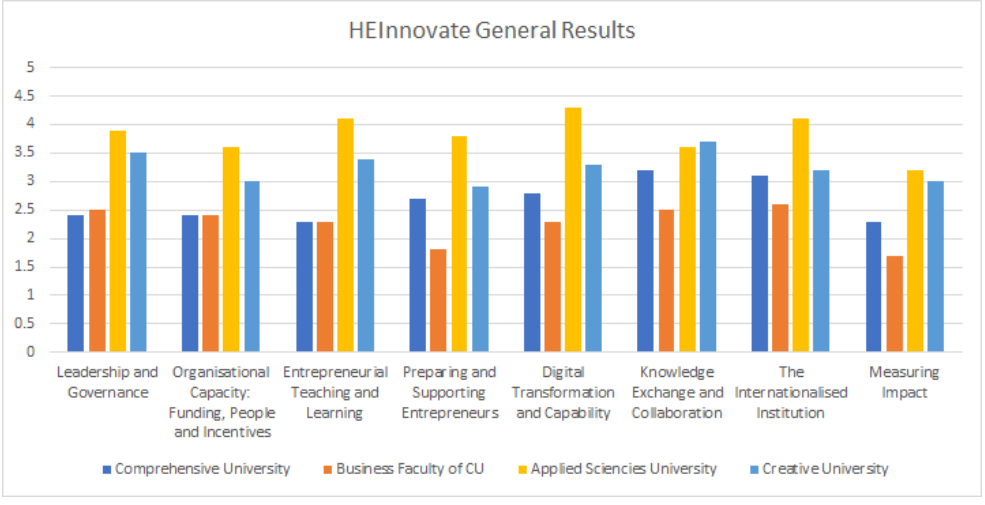
15.5 Main Findings

15.5.1 Peruvian Universities' State of Entrepreneurship and Innovation

This section shows the results of the HEInnovate assessment complemented by the in-depth interviews applied to three Peruvian universities, all of them based in Lima.

a. HEInnovate General results

Figure 1: HEInnovate General Results



Even though the intention of this study is not to make a hard comparison or raking between the studied higher education institutions, but rather try to better understand their current entrepreneurial potential and the factors enabling and stopping it, in general terms, the results of the HEInnovate assessment showed the following: on a basis of 40 points in total, the University of Applied Sciences (ASU) got the highest score with 30.6 points; the second highest belongs to the Creative University (CreU) with a score of 26 points; the Comprehensive University (CU) comes in third place with a score of 21.2 points; and in the "last" place is the Business Faculty of the Comprehensive University (CUB), with a score of 18.1. For all the four analyzed institutions, the weakest dimension was "Measuring impact", with an average score of 2.44; on the other hand, the strongest dimensions were "Knowledge exchange and collaboration" and "The Internationalized institution" both with an average score of 3.2, and "Digital Transformation and Capability" with an average score of 3.1. See Figure 1 for an overview of the mentioned results.

15.5.2 Enablers and Stoppers of Entrepreneurialism and Innovation

From all that was expressed in the interviews, 25 concepts that influence, either positively or negatively, the innovation and entrepreneurship potential of each HEI were retrieved. These can be grouped into 5 key categories: 1) external, 2) leadership, governance, and strategy, 3) culture, 4) budget, and 5) people.

These categories relate to the first two dimensions of the HEInnovate framework: Leadership and Governance, and Organizational Capacity. Therefore, it is understood that these are the bases that in a way determine the scoring of the other dimensions.

The factor identified as the most influencing, either positively or negatively, the innovation and entrepreneurship potential of universities is the Culture, followed by the Leadership. In several cases, the same concept is an enabler for some and a stopper for others. For instance, when the culture is innovative, open and promotes communication and articulation, like in the cases of ASU and CreU, then it is an enabler that influences the entire organization. When the organization is driven by Academic Culture, closed, risk-averse and with a clear bias against entrepreneurship, like in the case of CU, then it is a stopper that negatively affects the rest of the dimensions. The same with Leadership: if the leaders of the university are committed and

aware of the value of entrepreneurship, like in ASU and CreU, it can even turn the academic culture in favor of it. If it is not, like in CU, it just enhances the hostile environment for entrepreneurship and kills the motivation and initiatives of the few people that promote it, which is what happens in the case of CUB, whose initiatives are constrained by CU's culture and leadership. At the same time, of the cases studied, it can be seen that the Strategy also makes a huge difference. ASU scores higher than the others in almost all dimensions, because it has a clear strategy, while in cases where the strategy is absent, innovation and entrepreneurship initiatives have less impact or simply do not occur because there is no articulation and resources.

Budget has been pointed out in all cases as a generalized stopper, even for organizations that have a pro-entrepreneurship culture and leadership, since without a budget they cannot carry out innovative initiatives, nor fulfill their entrepreneurship objectives. Furthermore, from the interviews it is understood that the institutions invest very little, or almost nothing, in incentives and in the development of innovative skills of staff, both academic and administrative. The focus of the responses of all interviewees was on students, therefore it is assumed that investment in staff is not a priority, which is a problem because it has also been noted that there is a generalized lack of innovative and digital skills, especially in teachers.

Regarding the People dimension, the stoppers that stand out the most, especially for academics, are the lack of innovative mindsets, the lack of skills to relate to the industry, the lack of digital skills, and the lack of international perspectives. Additionally, older age has been pointed out as a factor that enhances these stoppers. On the other hand, Intrapreneurship proves to be an enabler all the studied HEIs have in common, important in the absence of strategy, with the potential to influence the culture and influence the environment when it obtains good results.

Finally, all interviewees agree that COVID has been one of the main enablers, either to begin to take into account the importance of entrepreneurship or to reinforce the conviction that already existed. Especially in the case of CU, it has been the factor that has made the difference and has generated a window of opportunity for these issues to be integrated as strategic for the university. Along with this, COVID has also revealed common shortcomings, especially in the planning and investment in digital infrastructure. On the other side, Peru’s systemic issues, such as low investment in STI, low level of digital connectivity, poor coordination between

government agencies, lack of communication channels between the state, academia and civil society, misunderstanding of the concept of entrepreneurship, among others, have been stated as common stoppers for entrepreneurialism that affect all the studied HEIs.

15.5.3 Actions on 21st Century Skills, Employability, and Digitalization

From the interviews, it was also possible to determine what concrete actions the HEIs studied were taking in relation to the challenges of the future established at the beginning of this research. These challenges correlate with the HEInnovate dimensions of Entrepreneurial Teaching and Learning, Knowledge Exchange and Collaboration, and Digital Transformation and Capabilities. In terms of building 21st century skills, some are leveraging the use of agile methodologies and project or challenge based learning of both organizations and the community. A good practice of both ASU and CreU is that they are implementing these methodologies transversally to all their careers. In the same line, another good practice, also present in CUB, is the involvement with organizations to generate these projects, as this facilitates networking and early visibility of student talent, which also impacts on improving their employability. The negative side is that these practices are not mandatory or regulated, but are left to the academic freedom of the professor, as a result of which, in several cases, the curricula are still very traditional and old-school. Likewise, there seems to be very little measurement of their impacts, so there is not enough visibility to optimize them if required. In addition, there is a general lack of training in technological skills, even though they are recognized as crucial for the future.

On the Employability side, as already mentioned, the advantage is that relationships are being generated with external organizations, whether public, private or social, in order to generate interaction between them and the students. The negative side is that this is not a standardized practice, nor is it considered crucial in all institutions. In several cases it is done in isolation, at the will of the professor, without formally belonging to the employability strategy. Moreover, it is a practice that is just being explored, so its scope is still very limited. In general, the interviews give the feeling that what the institutions understand by actions that promote Employability is still linked to the traditional vision of having a job bank and organizing fairs or networking events.

Finally, regarding Digitalization, it seems that thanks to COVID this has become a priority and has been accepted as necessary even by the most conservative members of the universities. However, there are still doubts as to whether this will still be the case when the pandemic is over, since only in the case of ASU have they indicated that structural actions are already being taken to digitize the operation of the university. In the same line, the lack of planning and investment in digital infrastructure has jumped out as the main weakness in this dimension, something that is expected to improve in the following years given the learnings from this pandemic. Moreover, there is still much work to be done to promote digital culture in all members of the universities, in fact, another common weakness to solve is the lack of digital skills of professors, which currently seems to be compromising the quality of students' online learning.

15.5.4 Ideas to maximize Entrepreneurial and future-proof potential

Respondents were asked to think of suggestions or actions to reverse the effect of the current stoppers on the entrepreneurial capacity of their universities. In total, 59 ideas were retrieved, which have been grouped and categorized according to the HEInnovate dimensions.

Most of the ideas received revolve around how to solve the country's systemic stoppers and the importance of the role of the State in 1) generating awareness and pressure about the importance of entrepreneurship, 2) the articulation of efforts that currently come from different agencies, and 3) the increase of incentives and funding for entrepreneurship. This reaffirms that the perception of the interviewees is that the country's context regarding entrepreneurship is the baseline stopper that must be resolved for everything else to work. Additionally, they suggest leveraging on the pressure that the productive sector can generate on universities, since they are the main employers of their students, and one of the main motivations for students to enroll in universities is to become more employable.

The second category that received the most ideas for improvement is Leadership and Governance, in which the focus is on

1) strengthening the capabilities of leaders and reducing the bureaucracy of university processes,

2) generating awareness of the value of entrepreneurship both internally and externally,

3) ensuring the articulation and empowerment of entrepreneurship initiatives from the university's strategy, and

4) creating safe spaces for entrepreneurship and innovation. This also shows the perception of the interviewees that having a committed leadership and a clear strategy are the determining factors for increasing the capacity for innovation and entrepreneurship in their universities.

The rest of the ideas revolve around the stoppers of budget, culture and people, highlighting the need to obtain greater resources for innovation and entrepreneurship initiatives, greater investment in digital infrastructure and the development of innovative skills of staff, and generating a culture of collaboration and openness, both internally and externally. No ideas corresponding to the Internationalization and Measuring Impact dimensions were received, which also reinforces the idea that the perception of the interviewees is that the current situation of innovation and entrepreneurship capacity in their universities requires keeping the focus on solving the first level stoppers, since if these are not solved, any other initiative will not achieve the expected impact.

15.6 Conclusions

Having carried out the analysis based on the research questions, the conclusions are:

1. The young, modern, and for-profit universities show a higher entrepreneurial capacity in comparison to the older and traditional university. The key differential factors of their entrepreneurial potential lie in the dimensions of Leadership and Governance, and Organizational Capacity: Funding, People and Incentives.

2. The factors that influence, either positively or negatively, the entrepreneurial potential of the HEIs studied are 1) systemic problems, 2) culture, 3) leadership, governance and strategy, 4) budget and 5) people.

3. Common stoppers are 1) systemic problems such as low investment in STI, low development of digital culture and digital connectivity, lack of articulation between government, academia and civil society, lack of awareness of the social value of entrepreneurship, 2) Academic Culture, which reinforces the traditional vision of the university, bureaucratic, closed to interacting with members of the ecosystem both internally and externally, risk averse and which sees entrepreneurship as a factor that plays against its reputation, 3) a lack of strategy, planning and measuring the results of entrepreneurship and innovation, 4) a lack of budget that affects all innovation and entrepreneurship initiatives, and 5) a lack of people with entrepreneurial skills and mindsets, especially in academics.

4. Common enablers are: 1) Risks that generate opportunities, such as COVID that has propelled the need for entrepreneurship in the country, and has activated the survival instinct of universities, 2) Intrapreneurs, 3) Innovation promoters and articulators, such as Innovation Committees and Innovation Hubs.

5. Leadership and Culture are stoppers for the traditional university, whereas they are enablers for the younger and modern ones. The leadership is a reflection of the culture, however it also has the power to change it.

6. Leadership as a stopper is driven by Academic Culture: unaware of the value of entrepreneurship, not committed to entrepreneurial initiatives, lacking management skills, feeding bureaucracy and afraid to take risks that may affect its reputation.

7. Leadership as an enabler is competitive, open and results-oriented, that recognizes the value of entrepreneurship and therefore promotes it on all fronts, in the strategy, in the culture and in the budget.

8. The nature of the organization seems to be an aspect that can be a stopper or an enabler of entrepreneurialism, even in spite of the academic culture. From the cases studied, the for-profit universities tend to demonstrate greater entrepreneurial capacity precisely because of their inherent spirit of competition and search for efficiency.

9. While some efforts are being made, there is still much opportunity for improvement in developing 21st century skills, strengthening student employability, and planning and investing in Digitalization.

10. In sum, it can be concluded that the answer to the main question is: the Peruvian universities studied are still in an initial state of innovation, entrepreneurship and future-readiness. Although some show more progress than others on the road to becoming entrepreneurial, especially those with a committed leadership, a clear strategy and a culture of open innovation, they are all affected by systemic problems in the country. As long as these problems continue to exist, even universities that demonstrate high potential and motivation will continue to be limited, since these shortcomings have direct effects on their leadership, culture, budget and talent.

15.7 Recommendations

15.7.1 Recommendations for Policy Action

1. Generating awareness and pressure for Entrepreneurship and Innovation

- Generate awareness of the social importance of Entrepreneurial Capacities, Digital Culture, and Triple Helix collaboration in both, the Industry Sector and Academia.
- Raise awareness in the Productive/Industry Sector about the urge of Entrepreneurial Talent, so as to push universities to change in order to keep their students employable.

2. Ensuring Articulation and Entrepreneurial Skills Development

- Implement a government body that coordinates and articulates the currently disjointed efforts towards entrepreneurialism. For example a Ministry of Entrepreneurship and Innovation.
- Integrate the training of innovation and entrepreneurship skills from school onwards.

3. Increasing Funding and Incentives for Entrepreneurship and Innovation

- Enhance the attraction of international private capital for entrepreneurship.
- Increase incentives for Academia to develop entrepreneurial activities.
- Increase incentives for the Productive sector to engage with Academia.

15.7.2 Recommendations for universities

1. Improving Leadership and Governance

- Generate awareness of the value of entrepreneurship internally and externally.
- Strengthen the innovative and management capabilities of leaders.
- Reduce the bureaucracy of university processes.
- Include entrepreneurship and innovation as a key part of the HEI strategy.
- Develop a strategy for Entrepreneurship and Innovation.
- Ensure the articulation and empowerment of entrepreneurial initiatives.
- Create safe spaces for entrepreneurship and innovation

2. Improving Organizational Capacity

- Increase the budget for entrepreneurial initiatives according to the strategy.
- Invest in staff entrepreneurial skills development.
- Establish incentives and rewards for entrepreneurialism among academics and administrative staff, whether they are monetary or reputational.
- Establish transparent communication channels for collaboration between different faculties and departments.
- Destabilize Academic Culture by adding pressure on the completion ofentrepreneurial objectives.
- Prioritize diversity of views and backgrounds when hiring new faculty members.

3. Enhancing 21st century skills development through Entrepreneurial Teaching and Learning

- Sharing and Standardizing best practices
- Structure and standardize entrepreneurial training best practices
- Generate spaces to share best practices among teachers
- Standardize project/challenge based learning across all curricula
- Reinforcing interdisciplinarity, innovative skills and mindsets
- Generate exposition for teachers to real topics of innovation from the “outside world”
- Generate spaces for interdisciplinary training between teachers, students and staff.
- Enhance the training in technological skills

- Integrate business and digital skills training across all careers.
- Enhance relationships with external stakeholders, especially industry, for designing an updated curricula

4. Enhancing Employability through Knowledge Exchange and Collaboration

- Establish coordinators of Knowledge Exchange and Collaboration
- Establish a Directorate for Relations with Civil Society in charge of promoting and coordinating the efforts for external collaboration
- Establish a Head of relationships with industry that works at a university level
- Identificate and leverage on the university allies of open collaboration
- Innovating in Employability efforts
- Showcase student abilities and skills through university professional digital channels
- Reinforce the relationship with alumni
- Generate more joint projects between students and industry partners

5. Planning and investing in Digital Transformation

- Improve the planning and the processes of Digital Transformation
- Increase investment in digital infrastructure
- Hire more people dedicated to Digital Transformation
- Increase the awareness of the importance of Digital Culture
- Enhance open innovation initiatives

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16 Understanding the determinants of academic entrepreneurship: A case study of Mahidol University

Rongrong Rongratana

16.1 Background

Although Technology Transfer Offices have been established in selected Thai research universities to facilitate the dissemination of research results and encourage entrepreneurial activities, entrepreneurial activities and commercialization outputs are considered less successful compared to other countries in the region (Wonglimpiyarat, 2019). In general, Thailand's research productivity is still relatively low. Although it has high activity in certain areas: agricultural and biological sciences; immunology and microbiology; and veterinary sciences, the publication citation impact is lower than the world average (British Council, 2015). Likewise, research commercialization outputs: the number of patent applications, granted patents are small, at only 0.07% and 0.02% of the world outputs. There have been only a few number of licenses, spin-outs, consultancy and contract research projects originated from Thai National Research Universities (UNCTAD, 2015; ELSEVIER, 2015).

With given circumstances, Mahidol University is also reported with low entrepreneurial efforts by academics: a small number of invention disclosures, granted patents, spin-off companies, and consultancy businesses, albeit its initiatives to accelerate transformative research for medical and health sciences innovation to the public and market (iNT, 2020). This reflects a main problem worth researching: the underlying factors affecting the intentions or decisions of academics to involve in entrepreneurial activities.

Previously mentioned factors may have influenced the intentions and decisions of faculty members to engage in entrepreneurial activities. Thus, research on academic entrepreneurship has been carried out to study these influences at a macro level, i.e. organizational strategies, structures and cultures. However, only a few have examined factors underlying the adoption of academic entrepreneurship at the individual level within an organizational context (Bercovitz & Feldman, 2008).

Furthermore, academic entrepreneurship research often put an emphasis on a limited range of entrepreneurial activities, particularly the traditional commercialization activities: invention disclosure (Thursby & Thursby, 2002), patenting and licensing (Owen-Smith & Powell, 2001; Siegel et al., 2003), or new firm establishment (Murray, 2004; Wright et al., 2006). Similarly, research on university-industry linkages mainly identified determinants of certain entrepreneurial activities: joint R&D or contract research, from perspectives of industry partners, not from the side of academics (Abreu & Grinevich, 2013).

Consequently, there remains significant gaps in the understanding of how individual academics perceive academic entrepreneurship, intent to, or decide to participate in a wider range of entrepreneurial activities beyond those traditionally studied in the majority of research, and how individual factors and organizational influences play parts in determining their engagement in different entrepreneurial activities.

To address the research gaps, , the study aims to fill the aforementioned research gaps. The main objective of this research is to investigate both individual-level and institutional factors that affect academics' intentions and decisions to engage in entrepreneurial activities in a Thai university context: Mahidol University. The study uses the framework of the Theory of Planned Behavior by Ajzen (1991) to achieve specific objectives:

1. To examine academics' perceptions about academic entrepreneurship and their attitudes towards participation in entrepreneurial activities

2. To assess social influences on their intentions and decisions to engage in their perceived entrepreneurial activities

3. To identify facilitators or obstacles at the individual and organizational levels that have impacts on the growth of faculty participation in entrepreneurial activities

4. To provide practical implications for university and technology transfer administrators as well as faculty leaders for how they should develop further to support academic entrepreneurship

The emerging research questions draw on the research problems, research gaps as well as the works of Virasa (2011) and UNCTAD (2015) that pinpoint the necessity for Thai university administrators to better design policies and organizational mechanisms to encourage academic entrepreneurship, especially by increasing faculty participation in entrepreneurial activities. Following this line of thought, the scope of study is to examine micro-level factors and external organizational influences affecting academic intentions and decisions to involve in the process of academic entrepreneurship. Therefore, the key research question are defined with relevant subordinate questions as follows:

The Main research question: How do individual and institutional factors affect academic engagement in entrepreneurial activities to disseminate or commercialize knowledge generated within the university?

Subordinate research questions:

1. How do academics perceive academic entrepreneurship and engagement in entrepreneurial activities to disseminate or commercialize knowledge generated within the university?

2. How social norms influence the intentions or decisions of academics to engage in the perceived entrepreneurial activities?

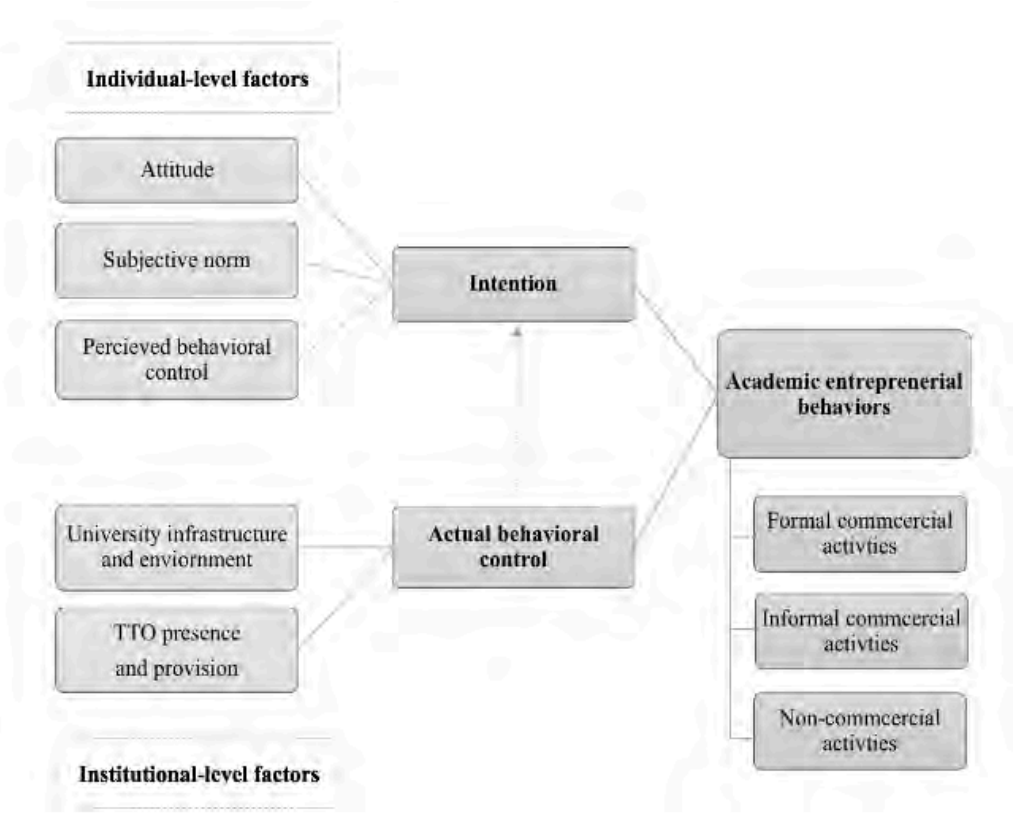
3. What are facilitators or barriers perceived by academics to affect their engagement in entrepreneurial activities?

4. How do the university's infrastructure and existing environment affect academics' involvement in entrepreneurial activities?

5. How do the presence and provisions of the Technology Transfer Office impact academics' entrepreneurial behaviors?

The major theoretical considerations that motivate this study are drawn from

entrepreneurship, higher education management and psychological studies. Specifically, two strands of theory: (1) academic entrepreneurship and (2) intention models for predicting entrepreneurial behavior are utilized to form a theoretical basis for this study. The theoretical concepts are incorporated as multidimensional constructs in the analytical framework, and provide means to address the research questions as illustrated below;



16.2 Methodology

The study is predominantly set on a constructivist philosophical worldview since it seeks to construct meanings of the studied phenomenon through exploring various perspectives of participants, and attempting to understand subjective meanings influenced by historical and cultural norms of participants. In addition, it is concerned with the sensemaking process of people in a particular context as it seeks to understand how academics' beliefs at a Thai research university are translated into their entrepreneurial involvement, and why they have such beliefs that influence their entrepreneurial behaviors.

A single case study is employed due to a number of reasons. First, a single case study

provides flexibility for the researcher to draw on multiple sources of evidence to add more depth to data collection to this study, thereby resulting in richness of data and research validity. Second, a single case study is holistic in nature and allows the researcher to capture the case's uniqueness. Third, it is suitable for revealing the under-researched phenomenon (Stake 1995; Yin 2003). This applies well to the faculty engagement in academic entrepreneurship, which appears to be the less-studied phenomenon in the context of Thailand.

Secondary research and interviews are used to obtain data. The purposeful sampling is employed to identify and select a group of participants for the interviews. As this study seeks the perceptions of academia towards a wide range of entrepreneurial activities to disseminate or commercialize university knowledge, 10 academics from different faculties, colleges or institutes were selected purposefully to represent diverse academic disciplines and the climate of academic entrepreneurship at MU.

Qualitative content analysis is employed as a method to analyze data. To specify, a sequential approach of data analysis suggested by Creswell (2009) was adopted to guide the process of data interpretation in this study. The process consists of four actions taken as follows; data preparation, data coding, theme and category identification, interpretation and validation. To ensure research validity and reliability, the researcher uses a triangulation, which is the combined methods of semi-structured interviews and secondary research to collect data, was used to cross-validate data. A reflective journal is created to document decisions made along the process and to keep track of any possible biases. In addition, a clear and transparent research design and procedure description is produced with an aim to make the research consistent. Respondent validation is later employed to achieve the research auditability. This was done by involving the interview participants to re-check and give feedback on their interview transcripts and final research findings to assure the correct and relevant information

16.3 Key findings

In response to the main research question, the significant findings from secondary research and interviews with ten individual academics at Mahidol University demonstrate that individual and institutional-level factors have both positive and negative influences on faculty

participation as well as intention to participate in academic entrepreneurship, which academics perceived as the added-value creation process of an entrepreneurial university. Academic entrepreneurship can be engaged through three streams of activities: formal commercial, informal commercial, and non-commercial activities. In general, the decisions to pursue any specific type of entrepreneurial activities depends on academics' interpretations of academic entrepreneurship, which are shaped by academic disciplines, types of knowledge produced, academic positions and years of working. To address the subordinate research questions, the major findings are summarized as follows:

Formal commercial activities are least favored among academics although being the most recognized entrepreneurial activities. The findings affirm previous studies (Owen-Smith & Powell, 2001; Marion et al.,2012; Feola et al., 2017) which indicated that the outcome evaluation of entrepreneurial acts significantly determines entrepreneurial intentions and behaviors. To exemplify, the perceived unfavorable outcomes of formal commercial activities, i.e. "impacts on research direction and basic research", or "the quality of viable products", result in academics' negative attitudes towards patent application, licensing and spin-out setup.

Social pressures from immediate leaders and peers determine the participation in informal commercial and non-commercial activities. The findings suggest that academics are influenced by their social context to engage in informal commercial and non-commercial activities, such as "collaborative research" or "curriculum improvement". The localized learning stems from the exposure to their department head or peers' behaviors. Interestingly, the leadership effects on entrepreneurial behaviors of Thai academics are in contrast to research results in the context of Western countries, in which social norms were found less significant in determining entrepreneurial intentions (Bercovitz & Feldman, 2008; Goethner et al., 2012).

Human and social capital are perceived as facilitators and barriers to academic entrepreneurial intention and engagement. The study results show that academics have a higher level of self-confidence in performing non-commercial activities compared to the other forms of entrepreneurial activities. The perceived facilitating factors are "being in collaboration networks and having prior experiences". By contrast, some commercial

activities, i.e. founding spin-out companies or working in the private sector through the mobility program, are perceived as impracticable. The expected inhibiting factors are "inadequate entrepreneurial skills and working time". The findings confirm other studies that specified the contribution of human and social capital to entrepreneurs' cognitive abilities and self-assertiveness. These are the foundation for their entrepreneurial capacities (Davidsson & Honig, 2003; Goethner et al., 2012).

The absence of the university's intangible infrastructure and entrepreneurial climate affect academics' engagement in commercial activities. The findings reveal that the strong presence of non-commercial activities in "the university's missions, communication channels or performance appraisal systems" leads to a higher level of academic engagement than commercial activities. In fact, there are tools, mainly physical infrastructure, targeting those who intend to pursue formal and informal commercial activities. Still, less attention is paid to the development of intangible factors: "working track and time, key performance indicator, communication of success stories, or entrepreneurial training". In line with the findings of Geissler et al. (2010), these factors contribute to an entrepreneurial climate, which affects individuals' decision-making and engagement, especially in commercial activities. Hence, the entrepreneurial climate proves to be another significant variable in determining academics' entrepreneurial intentions and behaviors.

Low awareness of the TTO's roles and trust in its capabilities lead to bypassing the TTO and effects on academics' entrepreneurial intentions. The study results indicate the limited awareness of the TTO's roles due to the perceptions that the TTO focuses mainly on "IP protection and commercialization", and "the location" that hinder academics' access to the office's support. In consistent with the previous study of Huyghe et al. (2016), it can be said that being unaware of a full spectrum of the TTO services result in unintentional bypassing, and a lower level of entrepreneurial intentions, especially in non-commercial activities that the TTO does not seem to promote well. In addition, a lack of confidence in the TTO's effectiveness in terms of "personnel capabilities, policy, and provision" have impacts on the academics' decisions to perform entrepreneurial activities.

16.4 Recommendation

It is important to point out some limitations along with potential areas for future research. As academic entrepreneurship is quite a new phenomenon and not widely recognized in the context of Thai higher education research, the number of participants who are willing and able to provide insights is limited. Therefore, future research may consider increasing the sample size to cover academics from broader disciplines and demographics. In addition, the research used a single case study of a research-intensive university, so the gained results are unique to the context and cannot be generalized.

To enhance the robustness and generalizability of the findings, it is recommended to replicate this study in other top research-intensive universities, namely Chulalongkorn University, Thammasat University, and King Mongkut's Institute of Technology Ladkrabang, which are explicitly claimed to be entrepreneurial universities. Future research should also investigate the interplay of individual and institutional factors by using longitudinal study to further the understanding of the transition process to entrepreneurship, or using quantitative research methods to gain a more wholesome understanding of factors behind varying entrepreneurial behaviors. By doing so, future research could compare similar or different determinants of academic entrepreneurship among the universities, thereby being able to make a generalization of the nature of academic entrepreneurship in Thai higher education institutions.

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17 An evaluation framework to measure and evaluate the outputs, outcomes and impact of third mission initiatives and social impact programs of King's College (Nepal)

Kaushal Sapkota

17.1 Background

After the first academic revolution of the late nineteenth and early twentieth century, higher education institutions (HEIs) (particularly in the global north) expanded their functions beyond teaching by integrating research (Etzkowitz, 2001) structurally, institutionally and strategically. This coupling of research and teaching has since then become a conventional wisdom (Martin & Etzkowitz, 2000). Calling it the dawn of the second academic revolution, scholars like Etzkowitz (2001) note that this 'undisputed model' of teaching and research has been affected by a new wave of the university's 'Third Mission' (TM). In addition, changing student demographics, rapidly evolving stakeholder demands, and new technologies, coupled with external pressures like reduced public funding and increasing need to diversify revenue sources are forcing universities and HEIs to embrace innovation, responsivity, and adaptation (Gilbert et al., 2018).

Scholars and policy makers are questioning the 'elitist' roles of HEIs to pursue knowledge for their own sake, thereby, criticizing them for creating little or no social impact, while advocating for them to 'leave the ivory tower' to advance the collaboration and exchange with the society (Marhl & Pausits, 2011). As a result, HEIs are facing an unprecedented challenge to define their purpose, role, organization and scope in society and economy. Responding to these triggers and trends, many HEIs have integrated TM into their systems, institutionally and strategically. Pursuing TM not only motivates them to 'leave the ivory tower' and generate social impact, but also provides them a 'strategic opportunity' to generate additional income and secure public support (external legitimacy) towards university's core tasks and functions (Pinheiro et al., 2015) as they get closer to their communities through programs like continuous learning, lifelong learning, knowledge transfer, social engagement and community

service.

Historically, global HE trends, more specifically Indian HE trends, have influenced the HE landscape of Nepal. A century after establishing the first college, Nepali HE has the opportunity of championing the second academic revolution – without even advancing the first academic revolution – thereby, co-creating and disseminating knowledge that are relevant to Nepal's political, economic, geographic, sociocultural and environmental contexts, opportunities and challenges. As the conversations about TM evolves in the global arena, national level discussions about higher education's relevance in the knowledge-based society are imminent. Some HEIs that are already institutionalizing TM will be important in these discussions as their institutional memories will help in defining the scope of the TM related policies and programs. The thesis defined the institutional context of the TM of one of such institutions – King's College. The institutional research case study aims to empower KC with a framework to generate evidence as they question the efficacy, effectiveness and efficiency of their TM programs while preparing for a national level discourse of TM.

17.1.1 Institutional Context: King's College

King's College (KC) is a private business school in Nepal. Established with the vision of "transforming society through entrepreneurship", the college has been contributing to the entrepreneurial ecosystem of Nepal by strategizing entrepreneurial education, research and TM programs. The college ventured into higher education in 2009[4]. Currently, it offers multiple specializations of Bachelor of Business Administration (BBA) and Master of Business Administration (MBA) programs and the recently launched Bachelors of Science in Information and Technology (BSIT) that are affiliated to Westcliff University California, USA. The programs are accredited by the Accreditation Council for Business Schools and Programs (ACBSP). In 2019, KC had around 150 graduate students and 350 undergraduate students, 20 full-time faculty members, 45 part-time faculty members, and 30 full-time faculty and administrative staff members. TM and social impact are at the core of the institutional strategy of KC, as it invests in various TM programs through its knowledge centers and excellence hubs like Demola, DoLAB, Empowerment Academy, Center for Research and Development, Community Service-Learning Program, and King's Incubation Center.

[4] The current leadership took over on April 1, 2011.

17.1.2 Purpose and Significance of the Study

Over the years, KC has invested in TM programs by providing financial and logistic support to various community-, student-, and faculty-led initiatives, at individual, unit and institutional levels. The college claims to have created socio-economic impact through its "visible" TM initiatives. However, it has not assessed this claim formally, neither has it evaluated its TM programs. Evaluating TM programs would allow programs managers to "inform decisions, clarify options, identify improvements, and provide information about programs and policies within the contextual boundaries of time, place, values, and politics" (Patton, 2017).

Inspired by the developments in evidence-based policy and realizing the increasing importance of monitoring, evaluation and learning in enhancing the effectiveness and efficiency of programs, the purpose of this institutional research case study is to develop a framework to measure and evaluate the outputs, outcomes and socio-economic impact of major TM centers at KC. While the case study research focused on KC and its TM initiatives, it aims to contribute to the discussions about HE's TM in Nepal. In addition, it also aims to develop an evaluation framework that can be contextualized for other business schools of Nepal if they wish to evaluate the socio-economic impact of their TM programs.

17.1.3 Research Question(s)

In relation to the above-mentioned purpose, the study is guided by two interrelated questions: 1) How does King's College define its third mission? 2) How can KC measure and evaluate the outputs, outcomes and the socio-economic impact of its TM centers (and programs)?, more specifically, 2b) What metrics and indicators can KC use to measure the effectiveness, efficiency and impact of its TM centers/programs?

17.1.4 Theoretical and Analytical Model

Scholars highlight the importance of evaluating TM programs to promote dialogue, discussions, and discourse about TM inside universities and between the environment and society (Secundo et al., 2017). However, the function of evaluation is not just limited to compliance or influencing external legitimacy. Rather it is a strategic approach towards

evidence-driven decision making. Evaluation helps to 'narrow the knowledge gap' (Gugerty & Karlan, 2014) by providing strategic directions to enhance the effectiveness, efficiency, and impact of TM programs. However, evaluating TM programs are difficult because TM is different according to the context (institutional logics) of each HEI as there is no agreed definition of TM and it often involves overlaps with the other two missions (Kitagawa et al., 2016). Nevertheless, the importance of evaluation cannot be denied, as universities can improve TM programs by 'mainstreaming evaluation' and 'manifesting, embedding and valuing' evaluative thinking (Patton, 2017).

The research combines two analytical frameworks to meet its objectives: 1) the Logic Model, and 2) the 'Reach, Breadth and Depth' framework.

The logic model is a popular concept in the world of program evaluation and assessment. Inspired by the systems theory, the logic model depicts assumptions about the resources needed to support program activities and produce outputs needed to realize the outcomes of a program – the program theory – thereby guiding an evaluation by identifying key program elements and by articulating how these elements are expected to relate to each other in certain environmental conditions (Wholey, 1994; Bickman, 1987; Cooksy et al., 2000). Used extensively in development and social change projects, the logic model (figure 1) elaborates a program by specifying inputs, activities, outputs, and impacts in a sequential series, and enabling researchers to evaluate if the linear sequence of inputs to impact is logical and reasonable (Patton, 2017). The logic model is used in the research to understand the program theories of various programs within the TM centers of King's College.

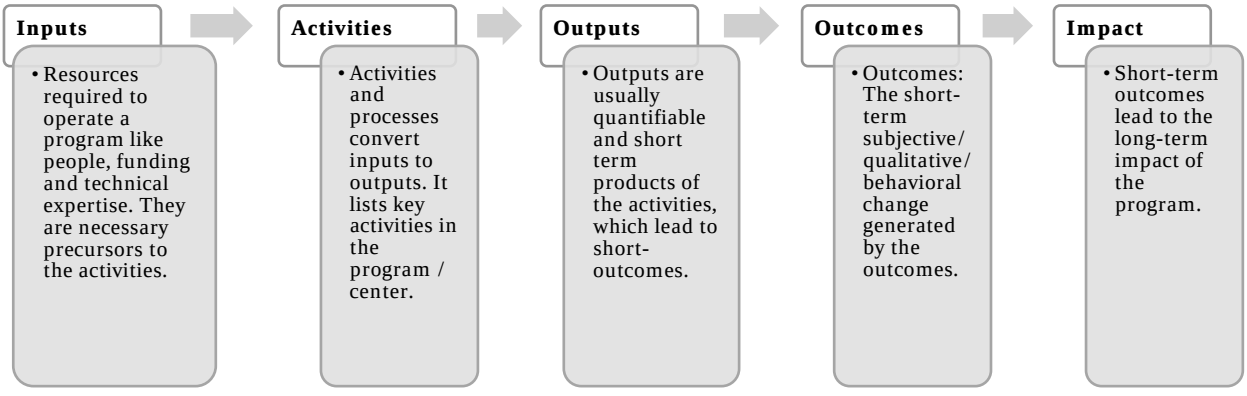

Figure 1: The Logic Model [Author's adaptation of Patton's Logic Model (2017)]

This research also draws inspiration from Mercy Corps Social Venture Fund's Impact Framework (Mercy Corps, 2018) to develop metrics and indicators, both quantitative and qualitative, to measure the reach, breadth and depth of the KC's TM programs. According to Mercy Corps (2018), a social impact program should impact its beneficiaries and the ecosystem from three dimensions: *reach* explaining the programs spread to diverse population, *breadth* explaining the scope of program's outputs and *depth* explaining the greater impact of programs outcomes to the beneficiaries.

This research combines the specific benefits of the aforementioned frameworks and approaches to understand the logics of TM and social impact centers at King's College and develop a framework to measure their outputs, outcomes and impact. As elucidated in Figure 2, it combines the reach-breadth-depth framework to develop qualitative indicators, quantitative indicators and reflective questions, that will help the organization to measure its output, outcome, impact and program efficiency.

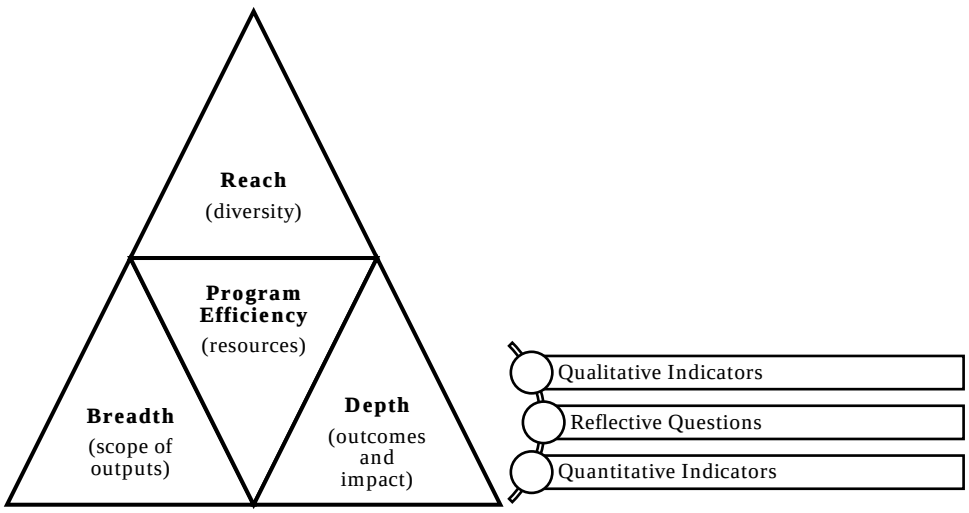

Figure 2: Synthesizing the two frameworks (Author's interpretation)

17.2 Research Methodology

This study was carried out using a qualitative research methodology, whereby the researcher was the primary instrument for data collection and data analysis (Merriam, 2002). The research also aimed at developing an inductive explanation of existing situation of KC's TM centers and programs thereby striving a deeper understanding of program theories and

objectives (Patton, 1990) while trying to develop the evaluation framework.

It is important to note that, each HEI is a product of a distinct process of social, economic and intellectual development – its institutional logics – that influences its strategies, programs and policies (Kitagawa et al., 2016). Therefore, researchers refrain from using a "one-size-fits-all" model to develop TM programs and evaluate them. Disregarding institutional isomorphism and appreciating the heterogenous nature of TM, this thesis combined grounded theory and hermeneutics analysis as it explored empirical data that has not been theorized or analyzed yet (Charmaz & Belgrave, 2007), and interprets existing literature on program evaluation, program assessment, impact assessment and assessment of TM programs, to answer the primary question of inquiry.

Due to the dearth of literature that describe, evaluate and assess the outputs, outcomes and impact of TM programs of KC or any other HEIs of Nepal, this research followed a pragmatist worldview. By not committing to any one system or philosophy (Creswell & Creswell, 2017) it internalized the heterogenic roots of third mission programs (Kitagawa et al., 2016). The research focused on the research question to use all approaches available to understand the problem and develop the evaluation framework (Creswell & Creswell, 2017).

The research collected detailed information of a particular institution using a variety of data collection procedures (Stake, 1995; cited in Creswell & Creswell, 2017), thereby making it a case study research within institutional research.

The data for this research were generated from document reviews and semi-structured interviews. Nine program managers - representing six TM centers - and an executive leader were interviewed during the data collection process. A purposeful sampling method was used to select the primary respondents of this research, i.e., the program managers of six TM centers at King's College - *Center for Research and Development (CERAD), Community Service-Learning Program (CSLP), Empowerment Academy (EA), Demola in Nepal, DoLAB and King's Incubation Center (KIC).* These centers aim to generate, use, and apply knowledge and other capabilities beyond King's College's internal environment. The centers were selected on the basis of their activities and their individual history of organizing annual programs. In addition, the research interviewed Narottam Aryal, the President of King's

College, to understand the perspectives of the institutional leadership towards the role of HEIs in the society, satisfaction/dissatisfaction of King's College's existing impact on various stakeholders of the entrepreneurial ecosystem of Nepal and the institutional vision, mission, objectives and strategies in and around TM programs.

During the analysis, the research explored the institution's perspectives on the role of HEIs in the society, thereby, defining the areas that could be considered as King's College's TM. After that, it used the analytical framework discussed in the previous section to develop metrics and indicators, both quantitative and qualitative, as well as guiding questions for reflection on the overall efficacy, effectiveness and efficiency of King's College's TM centers and their programs. The metrics and indicators focus on the reach, breadth, depth and efficiency of TM programs at King's College.

17.3 Key Findings

During its 100-year 'young' history, Nepali HE has gone through numerous changes, both voluntarily and involuntarily. It has responded to its own national, regional and global events/triggers/trends like the Rana regime, democracy, liberalization, privatization, civil insurgency, federalism and confirmation to the industrial economy (among others). It has tried to remain relevant to the needs of the country, either by borrowing ideas from global and the Indian HE, or by executing reforms. Considering that it is a 100-year 'young' HE system, the progress it has made so far is commendable.

However, it is not enough, as the problems and challenges within HE is complex and enduring. As ADB (2015) noted "there is a major disconnect between the academic programs offered by the universities and what the society and the economy require", in addition to other pertaining issues like inequity in access for women and disadvantaged population, lack of enforceable quality standards in many institutions, and lack of strategic endeavors to nurture innovation within HEIs. Furthermore, the government funding for HE is reducing from 27.6% of its total education budget in FY1992, to 8.1% in FY2011 (ADB, 2015).

In addition, as Narottam Aryal (Personal Interview, March 3, 2021) explains, Nepal's HE has been stuck between two "dangerous" traps – complacency trap and commercialization trap –

whereby many public HEIs are complacent towards their existing practices thereby not willing to thrive for excellence, while many private HEIs are in the commercialization trap as they seek to find the most profitable (cost-efficient, revenue maximizing) solution to teach. As a result, the HEI has struggled to develop relevant knowledge that would eventually benefit the nation.

If you couple these issues with growing complexities of other social, economic, political and environmental challenges that the country faces – for example, dependance on remittance and foreign aid, brain drain, youth emigration, and climate change – Nepali HEIs needs revamped, reenergized, and restructured, more than ever. And considering the disconnect between HE and society and decreasing government funding, HEIs TM could be an answer!

As, each HEI is a product of a distinct process of social, economic and intellectual development – its institutional logics (Kitagawa et al., 2016), it is important to understand the institutional logic of King's College before contemplating about it past, present and future TM projects and their impact in the community. Philosophically, King's College believes in the power of progressive education (whereby the learner is at the center of the learning process as they learn through real, immersive and relevant projects in an inter-disciplinary environment), entrepreneurial mindset (whereby individuals try to solve their problems by developing a sense of agency to proactively find opportunities and develop innovative solutions), community as curriculum (whereby knowledge is created in the exchange between the community or the real world and the classroom or the curriculum) and industry-academia-government-community collaborations to co-create and disseminate knowledge that are relevant to the local/regional context (King's College, 2021). As it thrives to develop a HEI institution – *the Communiversity* – based on these philosophies, the conversation of a separate mission for social contribution, technology transfer, knowledge co-creation and lifelong learning might be irrelevant for King's College.

Regardless, the importance of TM is definite. However, considering King's College's vision of connecting academia, state, industry and community, within and around the curriculum in its *Communiversity* concept, might dissolve the blurring boundaries between university's three missions – teaching, research and third mission. While the HEI will still be contributing towards making knowledge creation and dissemination process relevant to the society, the

distinction between university's three missions might not be relevant then. Nevertheless, the discussions around university's TM are relevant to Nepal, as it provides an opportunity for us to save time between the first and the second academic revolution, thereby making HE relevant to our social, political, economic, cultural and environmental contexts.

The research identified various activities that can be qualified as King's College's TM activities, including, non-credited courses for professionals and other lifelong learners, research projects that develop knowledge products that are relevant to different stakeholders external stakeholders, workshops, conferences, events and activities centered towards benefiting external stakeholders, knowledge creation and dissemination related collaborations, external consulting projects, entrepreneurship related bootcamps, incubation and student/faculty/staff led initiatives that promote the values KC stands for. However, the list is not exhaustive as the research focused on six TM centers that were organizing annual programs.

This study relied on grounded theory and hermeneutics analysis to design a list of 69 metrics and indicators that can be used to measure the effectiveness, efficiency and impact of KC's TM programs from the perspective of its reach, breadth, depth and resources utilization. It also suggested reflective questions that program managers can use to explore the strategic issues within their programs and make strategic changes accordingly. However, the true success of the framework depends on the program managers willingness to implement it, review it and provide necessary feedback for improvements.

17.4 Recommendations

Based on the context of the research, the thesis recommended that the 'true' success and application of the research lies in the management's commitment to embed evidence-based decision and results-oriented culture in their TM strategy. Similarly, the primary intended users of this evaluation framework are the program managers while the primary intended use of the evaluation framework is to generate data required to improve the programs. Therefore, program managers are recommended to use the framework by contextualizing it according to their unique program logic, circumstances and culture.

It is also important to assess the relevance of TM programs, and therefore the evaluation framework, according to the strategic priorities of the institution. According to KC's leadership and the common responses from TM program managers, King's College's strategic priorities center around the values of progressive education, promoting entrepreneurial mindset, collaboration and community as curriculum. Aligning all TM activities around those priorities would be important.

Finally, considering the dearth of literature around TM in Nepal, there are plenty of opportunities for future research. Some of the research questions worth exploring are outlined below: How do other stakeholders at King's College define its TM? What's the impact of King's College's third mission program? What will be the existence of university's TM when King's College dissolves the blurring boundaries between universities three missions by implementing it CAC model? What can be a common narrative (definition) of third mission for Nepali HEIs? Is university's TM a completely new concept for Nepal and for South Asia? Can universities achieve the second academic revolution without going through the first academic revolution? What are the requisites for effective TM strategies within HEIs?

17.5 Acknowledgements

This research was challenging for me; however, it has enriched my graduate school experience and enhanced my learning. Throughout this process, I have received knowledge, guidance, love and support from countless individuals and groups. I would like to dedicate this research to all those individuals and groups, including my family and my professors, who supported me during this process.

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18 The Role of Labor Market Outcomes in Transnational Education: A Case Study of the Binational Turkish-German University

Jessica Dimatteo Schüller

18.1 Introduction

Internationalization is one of the most prominent influences on higher education today. Globalization brought on and accelerated the internationalization of higher education (IoHE), notably increasing student and scholar mobility, expanding mobile programs and providers, and developing internationalization-at-home (IaH) arrangements. These developments have led to international higher education (IHE) playing an important and rapidly changing role in maintaining and strengthening relations between countries and economies (Knight, 2019). Today, the landscape is home to branch campuses, student and scholar mobility, institutional agreements, joint- and double-degree programs, franchises and twinning arrangements, global research networks, new independent international institutions, MOOCs, education and knowledge hubs, distance learning, and international joint universities (IJUs).

International higher education has been challenged and rejuvenated amid the COVID-19 global pandemic, specifically regarding IaH, which has increased and will, at least for the foreseeable future, play a key role in delivering international higher-education programs. At the same time, the labor-market outcomes (LMOs) associated with international higher-education programs are gaining importance for a variety of stakeholders, not least students participating in transnational education (TNE) programs themselves (Jones, 2019).

Collectively, these developments underscore the need for research examining the graduate LMOs of institutions with an IaH character. This master's thesis was developed during the COVID-19 global pandemic, with travel restrictions strongly restricting the movements of students and scholars. Universities across the globe must now prepare for a less mobile student body and be ready to lead crucial systemic changes that will ensure quality international education (at home) and graduate employability.

Binational universities (BUs) are setting the stage for these next-generation universities. With a foundation of mutual respect and collaboration, a gift for IaH, and a laser focus on graduate employability, BUs are an alternative to traditional university models (Proctor, 2020). BUs are models of inclusive IaH, grounded in the principles of mutually beneficial and collaborative TNE, while offering students strategic employment preparation (Schüller, 2020). There is an urgent need for more research into these innovative institutions – especially now, when they could be called upon to contribute to a viable blueprint for a post-pandemic university.

In this thesis, I investigate the role of the LMOs of one binational university. "Labor market outcomes" (LMOs) are defined by the Organisation for Economic Co-operation and Development ([OECD], 2017) as follows:

the outcomes of higher education graduates who are part of the labour force. They include employment status, earnings and the match between the level of their skills and the skills required at work, etc. Outcomes also take account of graduates who are not enrolled in further schooling and are not part of the labour force. (p. 16)

I seek to identify how student and alumni motivations, alumni outcomes, and institutional expectations for graduate careers align at the Turkish-German University (TGU) in Istanbul, Turkey. Dozens of BUs have emerged since the 1990s, with "sending countries" including Japan, Israel, Russia, and France (Knight & Liu, 2019). In addition, plans have been announced for the establishment of BUs in countries as varied as Azerbaijan, Turkey, Kenya, and Russia (Deutscher Akademischer Austauschdienst [DAAD], 2017a, February 9; Université de Rennes, 2020). BUs have even found their way into policies for higher-education development and internationalization in a few countries, such as Germany (Fromm, 2017; Helms et al., 2015). These developments show that BUs are fast-becoming a key instrument in higher education-based knowledge diplomacy (Knight, 2019). However, despite these advances, BUs remain chronically understudied. Little is known about this emerging institutional type, as Jafar (2019) argues:

While this model is building its presence successfully in many parts of the world by bringing new opportunities for students, faculty, and the national education system, it is not without

challenges and risks. More critical analysis is crucial to understanding the impact of transnational institutions and how they relate to higher education institutions in the host country (no p.).

As these ever-increasing news reports about the formation of binational universities transpire, it is important to learn more about this emerging institutional type and its relevance to the fields of higher education, international education, and more widely international affairs and international relations. As Knight and Liu (2017) outline in “Missing but Needed: Research on Transnational Education”, there is a large knowledge gap in relation to TNE and even more so for IJUs (which include BUs):

The emergence of joint universities (which involves collaboration from both host and sending country institutions to establish a new institution) is a relatively recent phenomenon and is worthy of more research, as they differ from IBCs, which are satellite campuses of foreign parent institutions. TNE studies would benefit from more PhD students, especially in host countries, doing their research on the different modes and dimensions of TNE. (pp. 15-16)

Knight and Liu (2019) conducted a systemic literature review of the academic research on international programs and provider mobility (IPPM). They found that most TNE research has primarily focused on international branch campuses (IBCs), with very little on IJUs. Of the 364 peer-reviewed articles on the six modes of IPPM, only 18 articles (5%) concentrated on IJUs. Furthermore, their review put Chinese joint-venture universities (which are technically not IBCs) into the IJU category (Knight & Liu, 2019, p. 9); thus, academic research into non-Chinese IJUs (including German BUs) comprises less than 5% of all IPPM research.

In addition, the role of labor-market outcomes in the appeal of TNE has been discussed only briefly in the recent literature. A 2014 British Council and the German Academic Exchange Service (DAAD) study found that the reason most commonly cited by students for choosing to study at TNE institutions (including BUs) was the perceived benefit in terms of employability (Knight & McNamara, 2014). Although the role and impact of IBCs (and study-abroad in general) on graduate employability has increased in recent years (Matherly & Tillman, 2020), research on the employability of BU graduates remains severely limited (Ashour, 2018). This means that students are potentially choosing to study at BUs for the

employability advantages, despite a lack of data and analysis to support their existence. For these reasons, this research is vital for generating knowledge on BUs and their labor-market relevance in terms of graduate outcomes. In summary, the previously mentioned studies highlight an enormous gap in the literature on BUs. Thus, this research attempts to identify the expectations of and outcomes for TGU graduates and the overall role of LMOs in the TGU. In the following section, I will define the research problem.

18.2 Research Problem

The research problem comprises two main dimensions: the individual and the societal. On the one hand, one does not know whether the graduates are receiving an education different to other traditional university models, leading to better career outcomes; and on the other hand, one does not know if these publicly funded institutions are contributing to the host societies in which they operate or, alternatively, exacerbating "brain drain." These problems are discussed in the literature mentioned earlier on career opportunities as a primary attraction of TNE (Knight & McNamara, 2014), as well as studies alloting a greater focus on the impact on the host country (Knight & McNamara, 2017). Thus, although these dimensions seem separate, they are inherently interrelated. For example, a defining attribute of 21st century higher-education institutions (HEIs) is their impact on employability and graduate outcomes (Matherly & Tillman, 2020). In addition to a university degree, there is an increasing emphasis put on peripheral, transferrable skills and graduate capital, which are important for success in both global and local labor markets (Tomlinson, 2017). BUs can provide a host society with many returns, and one of those is an exceptionally educated, bilingual, and bicultural workforce. However, if resources are poured into students who then leave the country to use their skills and knowledge elsewhere, a BU may only be a new, homegrown cause of brain drain. In contrast, students may leave temporarily and then return after a few years abroad, contributing to their home society and resulting in "brain circulation."

18.3 Research Purpose

The purpose of this research is therefore to examine the role of labor-market outcomes in transnational education, using a case study of the TGU in Istanbul, Turkey. I sought to identify the LMOs of graduates of the TGU and whether they matched student expectations

for participation in study programs at the TGU. By uncovering student expectations, graduate outcomes, and where they align (or misalign), I hoped to contribute to understanding the role of labor-market outcomes in the decision to study at the TGU. The aim of this master's thesis is thus to gain a better understanding of the relationship between labor market outcomes and binational universities, as seen from the host-country perspective. For this purpose, I identified the following objectives:

- To implement a case study of labor-market outcomes at a BU, including an investigation of the common motivating factors for the choice to study at the institution and alumni graduate outcomes

- To explore stakeholder views about the role of labor-market outcomes at Bus

- To evaluate the extent to which student, alumni, and institutional perspectives align with one another and formulate recommendations for BUs based on the results and findings

I designed this research to take into account the voices of the institution, the students, and the alumni. My personal research philosophy and understanding of ethical research goes beyond "do no harm" and, instead, seeks to leave what I have touched with my research better off than it was before my research project began. For this reason, to maximize my insights and the positive impact I had, I designated the following as the practical objectives of this research project:

- The primary objective was to provide the institution with helpful information about its students and graduate population to inform the construction of career and alumni programming and thus play a role – albeit, minor – in encouraging efforts to improve graduate outcomes. In detail, this involves the following:

    - Summarizing the perceptions, expectations, experiences, and outcomes regarding the LMOs of students and graduates of the TGU
    - Exploring the extent to which a TGU education affects LMOs, including choice of location for work

- Discovering how a BU education can simulate the development or enhancement of transnational human capital
- Reporting the results in an easily understandable and actionable manner

The insights gained are discussed in the context of the TGU's role in the Turkish economy and higher-education system. If the average TGU graduate is meeting the needs and expectations of local industry, there may be curriculum approaches taken by the BU model that could be mimicked to improve the labor market relevance of other Turkish universities and study programs. This research is intended to inform institutional, governmental, and societal stakeholders and provide input into strategic and operational planning concerning BUs. Finally, this research aimed to spearhead further investigation of BUs. BUs need to learn from one another, whether they have been in operation for 10 years or are opening this year.

18.4 Research Questions

This study considers the perceptions and expectations of students alongside stakeholder viewpoints and the LMOs of alumni. The key research question of this study was as follows: *What role do labor market outcomes play at the binational Turkish-German University?* To fully address this overarching question, six sub-questions underpin it as follows:

- What are the institutional goals and expectations of the TGU in relation to labor-market outcomes?
- What are the student motivations for attending the TGU?
- What are the student expectations and perceptions of labor market outcomes?
- What are the alumni expectations and perceptions of labor market outcomes?
- What are the labor-market outcomes of TGU alumni?

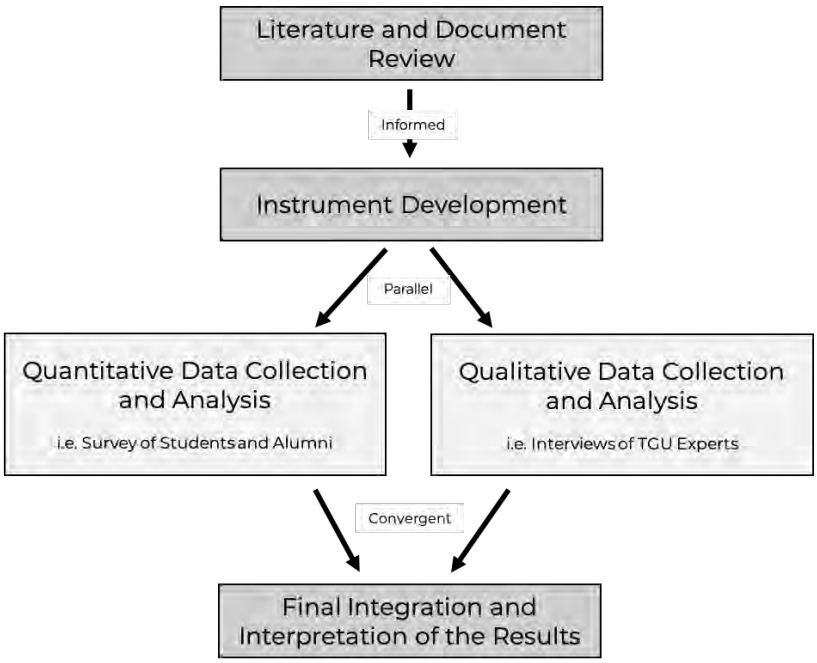
A mixed methods approach was adopted to address these research questions which I will discuss next.

18.5 Methodology

The study used a mixed-methods design (Creswell, 2012). Of several available possibilities, this study adopted the convergent, parallel, mixed-methods, case-study approach (Cresswell, 2012, p. 540). This involved the simultaneous collection and analysis of quantitative data (survey) and qualitative data (semi-structured interviews). Figure 1 provides an overview of the method.

Figure 1

Overview of the Mixed Methods Research Process



Source: Author's own conceptualization.

Both primary and secondary data were collected in this study. The primary data were collected through a survey and interviews, with secondary data coming from the academic literature; grey literature, including both official and unofficial documents; program and project reports; government proceedings and publicly available university and government records; bilateral agreements; evaluations; quality and audit reports; meeting minutes; media announcements; and laws and regulations. These secondary data were used as a launchpad, informing the instrument development and collection of primary data. With this combination of primary and secondary sources, a more complete picture could be drawn to respond to the

research questions. In the following two subsections, I detail the quantitative and qualitative research processes.

For the quantitative study, the target population for the survey comprised the currently matriculated students, as well as all alumni since the university's foundation. No sampling occurred because the entire student and alumni population could be targeted. This represents an "ideal" or "desired" sample (Andres, 2012). Accurate and up-to-date contact information for the students and alumni was held by the TGU. Institutional support was secured in February 2020, and it was decided that the survey would be administered centrally to students and alumni by the TGU public relations office. To conclude, this use of the entire population resulted in less bias and was preferable for this project, in contrast to selecting a sample. This was especially true for the alumni, who constitute a small group.

For the qualitative study, semi-structured interviews with information-rich stakeholders from the TGU and the DAAD were conducted for qualitative data collection. This involved asking a series of planned questions, while allowing flexibility to adapt the questions as needed (Fraenkell et al., 2009 p. 394). The advantages of this method include its effectiveness for recruiting participants, establishing rapport, clarifying questions, spending time with the respondent, and asking follow-up questions (Fraenkell et al., 2009, p. 394). It was critical to include multiple voices in this investigation to represent various angles and understandings of the TGU.

18.6 Key Findings

Results show that alumni have a slightly higher employment rate compared to the national average, primarily on the local labor market, and that they had intended on domestic careers. In contrast, preparatory-year and current students seek out a binational university education for perceived advantages on the international labor market, and plan careers and further study in Germany. Institutional stakeholders viewpoints aligned with vision for the university, but notable differences between the institutional concept and lived experience of students were found. This raised questions about the marketing of binational universities and German transnational education. In addition, strong yet differing roles of labor-market outcomes were indentified at each critical juncture of the student lifecycle, which led to the development of a

binational education-employability framework.

The survey results (N = 571) provide important insights into the role of LMOs at the TGU, from the perspectives of students and alumni. The motivating factors for attending the TGU were the only scale in which all groups were unified. Taken together, the quantitative results suggest an association between the factors motivating attendance at the TGU and the perception of LMOs. Additionally, preparatory-year students are notably more positive about the impact of a binational education on LMOs and the labor-market relevance of a TGU education. This contrasts heavily with the third scale, where significant differences between the perceptions of students and the actual outcomes of the alumni were revealed. The five themes emerging from the qualitative comments are distinct, yet closely interrelated. In summary, these results show that experiences of the alumni in terms of LMOs when they have spent some time in the labor market are vastly different to the perceptions of students, yet alumni have employment on par with the average in Turkey and in renowned (primarily German) companies.

For the interview findings (N = 4), I presented six themes. The first four were deducted from the coding guide, and the final two emerged inductively from coding. The institutional perspectives varied more widely than those in the student survey, highlighting diverse factors. The goals and expectations in relation to LMOs differed according to the institution, with the DAAD respondents more flexible on outcomes and the TGU primarily interested in retaining graduates in Turkey. The definition and role of a “binational” education provided by the TGU were seen as key – by both TGU and DAAD respondents – to ensuring high-quality LMOs for TGU graduates. Similarly, all institutional stakeholders confirmed that the role of LMOs at the TGU was strongly influenced by the labor-market preparation, connections, and relevance of the study programs provided by the TGU binational education and institutional structure. A related component was that of the TGU’s reputation, its recognition by key stakeholders, and its positioning in the domestic rankings. These three aspects were highlighted by all respondents as enhancing the attractiveness of the TGU itself and of the TGU graduates in the labor market. Finally, a conflict between elite and inclusive education was identified as a developing area, with the TGU aiming to attract a wide variety of student groups (Turkish, international, and refugee, as well as – from within Turkey – regional diversity and diversity in life experience). The key findings lead to insights for policy and

practice, which I will describe next.

Economic rationale and labor-market-relevant study programs: The TGU was formed on a variety of national- and institutional-level rationales, but it is the individual-level economic rationale that drives student interest and institutional market positioning (Knight, 2004). The DAAD respondents (rightly) positioned German TNE in the "collaborative" or "mutually-beneficial" category of TNE, distinct from the anglophone "independent" TNE. However, the economic rationale is not only alive and well at the TGU, it ensures the lifeblood of the university: students. The economic rationale for individuals (students) and host countries interested in taking part in TNE should therefore be considered with the utmost care: study programs must actually fulfil the labor-market needs in the host country, rather than focusing its efforts on what the partnering institution(s) wishes to provide. This can be done by refining proposal requirements to include more robust and detailed planning of labor-market relevance, such as 1) ensuring a greater emphasis in proposals on the labor-market relevance of joint university projects and specific degree programs and 2) requesting detailed information on the calculation of relevance (including documented input from industry), guarantees of equal access to work placement opportunities for all students, hiring of career services staff, and career education programs for each faculty and/or program to be implemented. There should be monitoring to ensure that the opportunities advertised could feasibly be provided by the project.

Identity-impact continuum: The identity of the TGU is based firmly on the reputation of Germany, but the impact is intended to be in Turkey. This is reflected in the study results, as the TGU's identity and reputation are being used to draw students into the institution, while the institution itself – according to both German and Turkish stakeholders – is supposed to have a positive impact on the host country of Turkey. TNE institutions must reflect on the conundrum of this conflict, because the marketing and recruitment approaches taken must reflect the vision and mission of the institution.

Problems with partial exports: As illustrated in Chapter 2, career services in Turkey are a young field, built on the structures from the United States and Germany. The interview respondents viewed administration as the responsibility of the Turkish side of the project. However, the TGU consortium has a partner university that is fluent in faculty-based

university career services and could provide guidance and support for developing a similar structure at the TGU. It is a strange contradiction that German TNE is being marketed for its career outcomes, while the development of the career services is disregarded, despite being an integral administrative unit in the modern university. One respondent mentioned wanting to avoid transplanting issues from the German higher-education system into other countries' education systems. This could be accomplished by co-planning administrative offerings that directly affect student success and graduate outcomes and, if necessary, bringing in consultant experts from outside of the two countries.

Two-pronged marketing: It is important to market the TGU to prospective students and to society. First, it is vital to be realistic in this marketing and advertising. This study found that the first cohort of alumni did not end up in Germany or abroad, so this information – and findings of future alumni surveys – should be reflected in marketing materials to enable prospective students to make informed decisions. Second, delicately and simultaneously, the TGU must improve its public image through targeted efforts that show what the university has to offer.

Inclusively elite: German TNE may be collaborative, but it is also exclusive and elite. Inclusion and excellence are not mutually exclusive. Recruitment efforts in smaller cities and rural areas should be actively encouraged and pursued. Options for avenues for social inclusion should be considered.

18.7 Recommendations

I make two recommendations for further research. The first stems from a major limitation of this study, and the second from one of the most significant unexpected findings. These recommendations are in line with those of a 2019 study that found no articles on pedagogy and curricula nor any on the outcomes and impact of TNE programs (Knight & Liu, 2019).

Outcomes and impact from the employer perspective: Alumni surveys do not tell the full story (Schomburg, 2016). This study looked at the internal stakeholders (students and staff) but tried to include external stakeholders (especially employers). Unfortunately, due to the small number of alumni, this was not possible at the time the study was being conducted. An

employers' perspective of the TGU and its graduates is needed. In addition, a longitudinal study that followed the alumni and investigated their employment trajectories over 5-10 years could provide a better understanding of long-term outcomes.

Pedagogy and curriculum: The alumni perceived the methods of instruction (teaching and learning) to be a key driver of the labor-market relevance of their education, in comparison to that of other local universities. The pedagogy and curricula at the TGU – and in BUs and other TNE institutions – merits further investigation. Curricula should be designed to intertwine the cultures, not present them as polar opposites or assume a "Turkishness" or a "Germanness" depending on who is teaching. More research is needed on the teaching and learning status quo at the TGU and in other BUs to assess what is working, what is not, and what this "binational education" looks like on the ground.

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19 International university rankings and the experience of the three state universities of São Paulo, Brazil

Flávia Soares de Oliveira Colus

19.1 Background

Since their emergence in the early 2000s, international university rankings have increasingly gained prominence and space in Higher Education (HE) debates. They have now a wide impact on several stakeholders of universities, with a powerful influence on students and policymakers, as well as how they establish partnerships with other higher education institutions (HEIs). They affect the decisions of students about where to study and how much they are willing to pay for education (Thiengo, Bianchetti & Mari, 2018; Tozini, 2017). In policies, they influence how governments distribute funds for HEIs (Parker, 2013; Vieira & Lima, 2016; Santos & Noronha, 2016; Thiengo et al., 2018), and how they evaluate universities (Finardi & Guimarães, 2017; Thiengo et al., 2018; Vanz, Dominique, Sánchez & Casado, 2018).

International university rankings also influence how decisions are made inside HEIs. One study conducted with 171 HEIs in Europe found that 86% of the institutions monitored their position on rankings (Hazelkorn, Loukkola & Zhang, 2014), and “over 70% of respondents said they used rankings to inform strategic, organizational, managerial or academic actions” (Hazelkorn, 2014). This means, “HEIs are increasingly altering their management to meet ranking criteria, to increase their scores and consequently attract more students and public and private funds” (Righetti, 2016, p.137). Many universities have integrated rankings in their strategic plans and have created institutional research units to monitor rankings results and devise strategies to change their positions (Hazelkorn, 2009; Altbach & Hazelkorn, 2017; Buela-Casal, Gutiérrez-martínez, Bermúdez-sánchez & Vadillo-muñoz, 2007).

While rankings have been widely researched in the past 15 years, the aspect of managers' perspectives on rankings is still under-researched. There is a lack of case studies to understand the influence of rankings inside the university, from the perspective of those who work and

lead those institutions, going beyond the analysis of institutional documents. Some previous studies that focus on managers' perceptions about university rankings highlight that views of rankings within universities can be varied and not unified (Kehm, 2016, p.88). Some studies also highlight regional differences in rankings attitudes, with Latin American university leaders being mentioned as often critical or skeptical about international university rankings (Bernasconi & Véliz, 2016, p.49). Leaders are also frequently hesitant to put rankings as a direct goal of their institution (Bernasconi & Véliz, 2016).

Another research gap is that many of the studies on the topic of university rankings come from European and North American countries, and university rankings remain understudied in regards to the Brazilian higher education system, (Calderón, Pfister & França, 2015; Righetti, 2016). Most of the literature in Brazil about rankings evaluate the performance of Brazilian institutions in the rankings (Vanz et al., 2018; Santos & Noronha, 2016), or is focused on presenting the history and methodology of those instruments (Vieira & Lima, 2016; Finardi & Guimarães, 2017).

With the context and research gaps presented briefly above, the purpose of this research is to understand, through the discourse and perceptions of university managers, how international university rankings affect the three state universities of São Paulo. University of São Paulo (USP), São Paulo State University (UNESP), and University of Campinas (UNICAMP) are three of the most important universities in Brazil, being responsible for around a third of the scientific production in the country (Marques, 2019). These three institutions are currently involved in a joint project called “Metricas.edu” initiated in 2017 that seeks to create a new framework of indicators to measure their performance and improve their international profile (Marcovitch, 2018). In this pursuit to improve their international reputation, these universities have been actively monitoring their position on international rankings. This research seeks to understand how managers and leaders at these institutions perceive the impacts of rankings in their universities, with a focus on their relationship with stakeholders.

The research uses stakeholder theory (Freeman, 1984) to frame the analysis. Stakeholder theory involves the fundamental idea that an organization should be concerned with its stakeholders and that managing an organization involves managing those stakeholders, as opposed to a view of the organization that focuses on shareholders only, where an

organization is concerned solely with making a profit for its shareholders (Donaldson & Preston, 1995). The idea behind the origin of Stakeholder Theory was “to build a framework that was responsive to the concerns of managers who were being confronted with unprecedented levels of environmental turbulence and change” (Fontaine et al., 2006, p.10).

Stakeholder theory has a powerful descriptive value for this research because university managers show a concern for the effects university rankings can have on their relationship with key stakeholders. Since university rankings are widely publicized, important stakeholders such as governments, students, and the broader society have access to the information they release about universities, which can alter their relationship with these organizations. Stakeholder theory, therefore, fits this analysis in that it will help understand how managers perceive the effects of rankings on how the many stakeholders of the university interact with them, and what possible actions these managers see universities taking to make sure rankings do not negatively disrupt their relationship with their stakeholders. The use of the theory is based on the idea that rankings affect university relationships with its stakeholders, and therefore university management reacts to rankings to maintain some control over stakeholder relations.

The main research question of this project is, therefore, “How do university managers of the three state universities of São Paulo perceive the impacts and uses of international university rankings in their institutions?” To answer these larger research questions, the following sub-questions will be useful to maintain the focus of the research and ensure that all aspects of the research question are addressed:

- Do managers believe rankings affect their relationship with their resource providers?

- Do they believe rankings play a role in the university relationship with key external stakeholders such as the government and the broader society?

- How does the internal community of the university, mainly academics and employees, perceive the impacts of rankings and the possible risks of these instruments?

- How do they see rankings being used in their universities' management and activities,

if at all?

19.2 Methodology

To answer those questions outlined above, this project follows a qualitative approach. Qualitative research “has rejected the practices and norms of the natural scientific model, and positivism in particular, in preference for an emphasis on how individuals interpret their social world” (Bryman, 2016, p.33). This choice is therefore coherent with the focus on managers' perspectives on university rankings, since it focuses on their perception of rankings, and does not try to achieve some objective, external view of those instruments Within the qualitative realm, this research consists of a collection of case studies of three Brazilian universities. These are the three state universities of the state of São Paulo, in Brazil.

The chosen methodology involves semi-structured interviews with high level managers of USP, UNESP, and UNICAMP. These three institutions were chosen because their important scientific production makes them the better-ranked institutions of the country, so while most Brazilian HEIs are not even featured in international rankings, they appear in most league tables, making it possible to monitor their performance over time, and increasing the chances that they will develop strategies to improve this performance. Their research-intensive profile means that their missions are at least partially compatible with the research focus of most international university rankings, making them the most interesting case in Brazil to understand the uses and impacts of international university rankings.

Within these institutions, the interviewees were chosen based on purposeful sampling, considering “places and people that can best help us understand our central phenomenon” (Creswell, 2011, p. 205). Since the objective of this research is to understand managers perspectives regarding rankings, the goal is to interview the rectors of each of the chosen universities, as well as the directors of the planning units and the coordinators of the units that monitor rankings and control indicators as those three key managers should be the most directly involved in using university rankings.

The original list of interviewees consisted of three people for each university involved. However, the rector of the University of São Paulo (USP) did not respond to contact attempts,

which left USP with two participants. Additionally one of the interviewees of the University of Campinas (UNICAMP) suggested that another participant joined the interview, leaving UNICAMP with four participants.

Since the main source of data for this research are interviews with Brazilian participants, it was necessary to get approval from the Brazilian committee of ethics before starting data collection. The project was submitted for evaluation in June 2020, and the ethics committee approved the research plan in August 2020 with no remarks. The process can be tracked using the following code: 35847820.1.0000.0077.

The research data were analysed using qualitative content analysis, also referred to as thematic analysis (Kuckartz, 2019). This type of analysis focuses on “working with categories (codes) and developing a category system (coding frame)” (Kuckartz, 2019, p.183). Coding is the most important part of data analysis in qualitative research. Coding the documents, whether they are transcripts or articles, “ is to make sense out of text data, divide it into text or image segments, label the segments with codes, examine codes for overlap and redundancy, and collapse these codes into broad themes”(Creswell, 2011, p.243).

For this research, the coding was based on thematic codes, meaning that the interview transcripts were segmented based on the topics or arguments they referred to (Kuckartz, 2019), such as “interpretation of ranking results” or “rankings as a consequence of universities activities”. The creation of the codes was data-driven (or inductive), which means there were no preexisting codes based on the literature, theory, or research questions (Kuckartz, 2019). The codes were created according to the themes found in the interview transcripts and later organized into broader topics according to the research questions and the analytical framework.

To make data analysis more efficient and reliable, a software for qualitative analysis was used in the entire process of this research. The chosen software is Atlas.ti because of its availability to Tampere University’s students and the researcher's previous experience with the software.

19.3 Key Findings

This study indicated some of the stakeholder relations affected by international university rankings from the perspective of the managers interviewed. It sought to respond to the question of how university managers of the three state universities of São Paulo perceive the impacts and uses of international university rankings in their institutions.

The first stakeholder group mentioned in the interviews was the state government of São Paulo. The discussion here involved the first sub-question, regarding whether managers believe rankings affect their relationship with their resource providers. Using the idea of stakeholder salience, this is one of the most important stakeholders of the analysed universities and it was approached from two different perspectives (Kohtamaki, 2015; Jongbloed, Enders & Salerno, 2008). The first was the perspective of the state as the university's main funder. Interviewees discussed how university rankings still do not have an important influence on the model of funding used by the State of São Paulo. They presented that, while current funding is stable and not related to performance on rankings, there is general insecurity on whether this model of funding will be maintained for long, and the university is facing pressures to be more socially accountable.

The second perspective on how rankings influence the universities' relationship with the government focuses less on the concrete mechanisms of funding and brings this accountability and legitimacy aspects of the university feeling a need to prove its worth and its value. This part relates mostly to the second sub-question, regarding whether managers believe rankings play a role in the university relationship with key external stakeholders. Managers noted that the politicians within the government read news regarding rankings as the media display them and that this sometimes leads to a misinterpretation of results. So while some believe that good ranking results can consolidate the quality and value of the state universities of São Paulo in the imaginary of politicians, other interviewees warned about the possibility of results being incorrectly analysed.

From that emerges a second key external stakeholder mentioned by managers, which is the media. This is an important stakeholder because it can affect how other key stakeholders such as politicians and the broader society perceive rankings. The interviewees mentioned that ranking results are often in the headlines of big newspapers in Brazil and that those tend to put

too much emphasis on the position of universities in a certain year, highlighting how a certain university has gained or lost certain positions, and not promoting a more detailed debate on what those numbers mean.

A third external stakeholder mentioned by managers was the broader society. Managers mentioned was how the broader society generally has little interest in the indicators used by most rankings, and consequently in ranking results. This is mainly due to the indicators used by rankings being mainly focused on academic production (Hazelkorn, 2009; Righetti, 2016; Leal, Stallivieri & Moraes, 2018; Thiengo et al., 2018; Buela-Casal et al., 2007; Altbach & Hazelkorn, 2017). For this particular group, excellence in the sense of being a world-class university is somehow less important than social relevance. Therefore, managers reported a high level of concern for the society as a stakeholder, in line with the trend for public and social accountability, but reported that traditional university rankings have a limited role in the university relationship with the external society.

However, managers also recognize that the international ranking scenario of today is much more diverse than when rankings first emerged, and that an analysis of its impacts on stakeholders can no longer be restricted to traditional rankings such as ARWU and THE World University Ranking The interviewees mention that the emergence of sustainability rankings might be a game-changer in its relationship with society and they have the potential to improve universities' relationships with the external society. The interviewees consider those rankings bring indicators that might be seen as more relevant by the society, and their university should be able to score better results on those sustainability rankings than they normally do on traditional rankings. This perception finds support in the results of previous editions of THE Impact Ranking. USP was classified as the 14th best university globally in the 2020 edition, and UNESP featured in the 101-200 group, both well above their results in the more traditional World University Ranking, also by THE. Managers also believe sustainability rankings are more aligned with their universities' missions, and that they will value and award points for many activities that those universities practice strongly and that are largely ignored by traditional rankings.

The fourth and final external stakeholder considered here was other universities with whom the state universities of São Paulo might establish partnerships. This was the external group

more influenced by university rankings from the managers' perspectives, showing that rankings are still very used by universities, and strengthening the idea that their indicators might be generally more focused on the academic community itself. This finding is also aligned with what was presented by previous studies on university rankings, where university partnerships are frequently mentioned as being guided by ranking results (Vincke, 2009; Righetti, 2016; Thiengo et al., 2018; European Commission, 2013).

Besides the perception of how rankings influence and are used by different stakeholders of the universities, stakeholder theory (Freeman, 1984) also brings the important idea that organizations should take action to manage their relationships with stakeholders. This means this research should not only identify impacts but seeing that rankings are relevant in numerous stakeholder relationships, this thesis can also understand whether universities take strategic actions to manage the impact of rankings on those relationships, diving more deeply into the ideas of considering the influence of stakeholders in organizational management. This discussion seeks to respond to the fourth and last sub-question regarding how managers see rankings being used in their universities' management and activities, if at all.

Because rankings influence stakeholder relationships (directly or indirectly), it is expected that university management might react and respond to university rankings. However, the interviewees generally did not recognize any strong movements from their universities to try to change ranking positions. This means that while rankings affect stakeholder relationships, the reaction of the state universities of São Paulo does not seem to be to chase better-ranking results to improve stakeholder relationships.

Still the managers interviewed generally recognized two internal reactions to university rankings: efforts to organize institutional data to submit to ranking providers, and use of rankings to learn more about their institution’s performance relative to certain indicators and other HEIs. This means that while managers were generally against changing university activities simply to improve ranking positions, they recognize that having open access to information on their performance in certain areas can help universities identify areas where they can improve, as long as that is coherent with their mission. This was also recognized in the literature as a way universities can benefit from rankings (Oliveira, 2018; Berghoff & Federkeil, 2009). Therefore managers do not generally agree with chasing rankings but do

believe that rankings can be a tool to institutional learning and achieving their own goals, at least as far as rankings provide transparent information on those areas.

The results of this study also show that stakeholder theory brings an important contribution to the study of HEIs and university rankings. The leaderships of the universities analysed showed a significant understanding of the importance of stakeholder management for the success of their organizations. The recent challenges in legitimacy and the high dependence of universities on external funding from government entities further reinforce the need to understand stakeholder needs. The internal characteristics of governance of the state universities of São Paulo, with a focus on democratic decision making, also means that internal stakeholders have a bigger impact than in most organizations and that no change can be made without significant support from the academic body of those universities.

19.4 Recommendations

From the discussions presented here, it is also possible to propose some course of action for universities and policymakers in Brazil. Within universities, the study showed that leaders and managers could find ways to benefit from international university rankings, as long as they keep a critical view of those instruments, and use them as tools to advance their missions and goals, instead of changing goals to pursue rankings. It can also be beneficial to identify rankings that are more aligned with their mission and make efforts to participate in those particular rankings. For policymakers in Brazil, while there are trends to increasing pressures for accountability and demonstration of results to society, it is important to keep in mind that those need to be balanced in order not to foster exaggerated competition, or the misuse of rankings, which can lead to mission diversion as warned by managers interviewed.

The efforts of this thesis by no means represent a comprehensive and exhaustive analysis on the topic of international university rankings in Brazil. This study brings a multiple case perspective focused on the better-ranked universities in the country. There is still room to understand how those institutions that are only rarely featured in international rankings are affected by those instruments. It is also important to develop further studies regarding the national rankings that have emerged in Brazil, which were not featured in this research. Those rankings feature a much larger number of Brazilian institutions, including many more than the

few institutions featured internationally. Looking at national rankings will also bring private universities to the discussion, which might alter completely the dynamics presented here. While the public universities reported in the research still have stable government funding as a gatekeeper to exaggerated market influences, private universities in Brazil have a very different reality, with the presence of many for-profit institutions.

Finally, the results of this research are limited to the universities analysed and are restricted to discussing managers' perceptions, not investigating the impact of rankings in other sectors of the university. Further studies can be conducted on the general perceptions of internal stakeholders such as professors and students, and other studies can be developed without the focus on perceptions, looking into how rankings might be included in institutional plans and documents. The field of rankings in higher education is far from being exhausted and new developments such as sustainability rankings are only beginning to show their impact, and early perceptions show that they might play an increasingly relevant role to university management, opening a relatively unexplored field of research.

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20 University-Based Social Innovation Platforms: What Role Do They Play in The Development of Soft Skills in Students?

By Hareem Salman

20.1 Problem Statement

Across the higher education sector, there is a proliferation of transdisciplinary centers for social innovation, where people from different disciplines and backgrounds come together to work on problem-solving projects, often in collaboration with external stakeholders, such as industry partners or members of their community. Due to their engagement in social innovation, these platforms can be referred to as university-based social innovation (SI) platforms. Some of these platforms use the process of design thinking to address social problems and believe that students learn important knowledge, skills and attitudes by working on these real-world projects. These skills are known as transversal competencies, as they encompass not just a set of skills, but also characteristics, attitudes, and abilities that are applicable in a variety of life situations. While transversal competencies and social innovation platforms have both separately gained much attention in the field of higher education, there is little research on how one influences the other. This research is unique in that it focuses specifically on the role of social innovation platforms in the development of transversal competencies in undergraduate students.

In light of the above discussion on social innovation platforms and their growing significance in the context of higher education, it becomes pertinent to study the role of these platforms in the higher education institutions in which they operate. Based on a survey of the literature, this research sets out with the assumption that the said platforms have significant learning outcomes for university students, one of which is the development of transversal competencies in students. The thesis will explore the truth of this statement, and will further explore how such platforms enable certain types of learning and skill development.

20.2 Research Questions

The main purpose of this study is to explore how social innovation platforms influence the development of transversal competencies or soft skills in students. Within this broader question, the following three sub-questions guide this research:

- RQ1. What features define the learning environment of SI platforms?
- RQ2. What are the learning processes experienced by students at SI platforms?
- RQ3. What are the outcomes of student participation in SI platforms? How do the learning processes influence the learning outcomes?

20.3 Theoretical Background

The literature review section of the thesis draws on recent literature to elaborate on social innovation as a concept and discusses the role of social innovation intermediaries in enhancing social innovation. It then defines a certain type of platform which is emerging in different universities globally as a 'social innovation platform.' This is not a term which is generally used or recognized in educational literature, but it has been introduced to fill a gap in the literature, which lacks a definite term to describe platforms of this specific nature and set of features.

Once the concept of social innovation platforms has been established, the study goes on to identify the practice of design thinking as a key feature of most such platforms. It revisualizes the concept of design thinking – which is currently gaining popularity in the realm of learning and higher education– using the lens of a well-established learning theory, namely the experiential learning theory by David Kolb. The learning processes theorized by the experiential learning theory can be portrayed through an experiential learning cycle (Kolb, 2015) as shown in Figure 1, while the process of design thinking can be depicted through a design thinking cycle (Hasso Plattner Institute of Design, 2021) as shown in Figure 2.

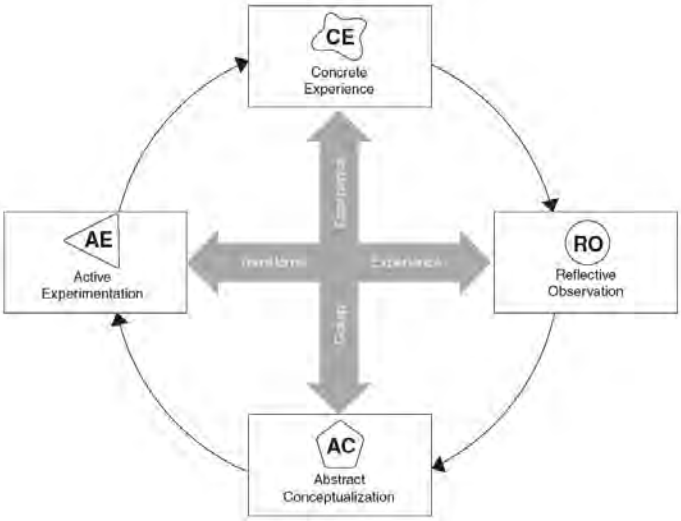
20.3.1 Overview of the Experiential Learning Cycle (ELC)

The Experiential Learning Cycle (ELC), depicted in Figure 1, is a visual portrayal of the experiential learning theory. The four nodes of the Experiential Learning Cycle (ELC) represent four different stages in the iterative cycle of learning. The EL cycle lies across a

matrix with two axes: the axis of *abstract conceptualization - concrete experience* and the axis of *active experimentation - reflective observation*. Both the axes have two extreme ends, and the ELC moves through these extreme ends. The different stages of the Experiential Learning Cycle (ELC) depicted in Figure 1 have explained below.

- **Concrete Experience:** The ELC usually begins from the point a person undergoes an experience, as experiencing a situation sets off the learning cycle in motion. The experience can both be an intentionally created experience (such as taking a field trip), or an unplanned, naturally occurring one.
- **Reflective Observation:** As one experiences a situation, it is natural to observe it and reflect on it. During reflective observation, a student can reflect on the circumstances that led to the experience, their responses to the stimuli, and the skills and attitudes they may have developed or enhanced while going through an experience. Hence, this stage is essential for the conscious solidification of acquired knowledge and skills.
- **Abstract Conceptualization:** In this stage, many of the learnings and reflections of the previous stage are fused into broader concepts and sometimes even become lasting personality traits. The process of abstract conceptualization involves mentally combining and categorizing many similar strands of experience into broader categories, which gives more meaning and better understanding to these individual strands of experiences.
- **Active Experimentation:** This is the stage where the newly learned concepts and skills are put into practice. The active experimentation stage indicates the never-ending and continuous nature of the learning cycle as the knowledge learned is put into practice and then the experience gained from practice allows for further refinement of the knowledge.

Figure 4: Experiential Learning Cycle



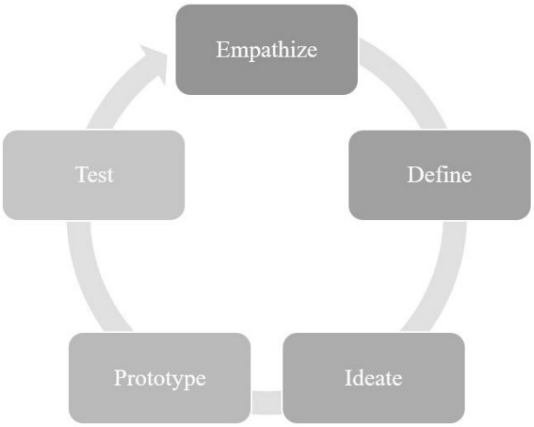
Source: Kolb, 2015, p.51

20.3.2 Overview of the Design Thinking Cycle (DTC)

While there are many ways to represent the process of design thinking, the most common visualization is the depiction of a 5-step cycle, as shown below in Figure 2. This design thinking process cycle, reinvented and popularized by the Hasso Plattner Institute of Design (2021), defines the five stages of the design thinking process as follows.

- **Empathize:** Understand a problem from the perspective of those affected by it.
- **Define:** Identify the main problem to be solved and frame it in a concrete, solvable way.
- **Ideate:** Brainstorm and envision potential solutions to the main problem.
- **Prototype:** Develop tactile models that visualize the proposed solutions.
- **Test:** Test the final prototype with intended users of the solution/product.

Figure 2: Design Thinking Cycle

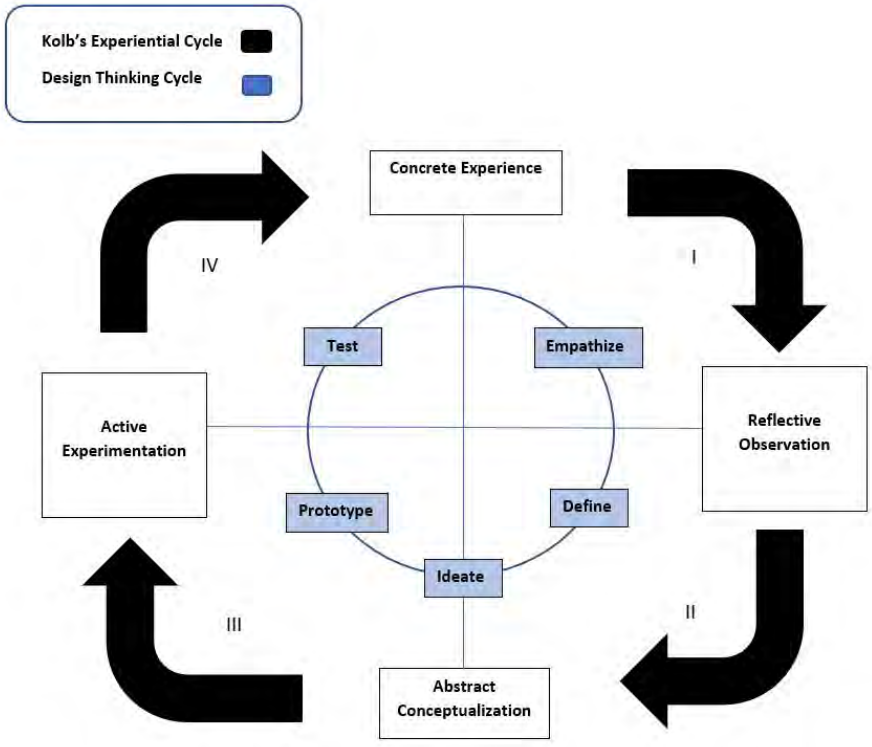


Source: Drawn by author. Adapted from Hasso Plattner Institute of Design.

20.3.3 Combining the Design Thinking and Experiential Learning Cycles

The experiential learning theory is a broad theory which is applicable to a wider variety of learning and teaching approaches, of which is design thinking is just one. On the surface, it may perhaps appear that design thinking as an active, practice-based methodology can only be related to the 'active experimentation' stage of the ELC. However, all five of the stages of the design thinking cycle closely align with the stages of the experiential learning cycle. Figure 3, which is a visual representation of the theoretical framework for this thesis study, superimposes design thinking cycle (DTC) on to the experiential learning cycle (ELC) to show how closely one cycle follows the other.

Figure 3: Combining EL Cycle and DT Cycle



Source: Drawn by author.

By mapping the stages of one cycle onto the other cycle, the study allows for a deeper understanding of design thinking in light of Kolb's theory of experiential learning. It also lends more credibility to design thinking – which is sometimes dismissed by educational scholars and traditionalists as a temporary fad – by situating it in the context of a more widely accepted theory of learning. By building a theoretical grounding which combines the design thinking and experiential learning cycles into one processual model rather than viewing them as two separate cycles, this study shows the similarities between the different stages of the two cycles to provide a more nuanced theoretical explanation for the learning processes happening at the social innovation (SI) platforms. This is because the combined cycles explain the processes of learning and competency development that happen at SI platforms from a joint multi-theory lens rather an individual theoretical lens.

20.4 Methodology

The thesis takes a comparative case study approach, where two university-based social innovation platforms based in universities in Pakistan and the United States are studied,

analyzed, and compared in terms of their outcomes for students. The study employs qualitative research methods and derives data from platform-related documents, online material, and interviews with staff and students from the respective platforms.
As the research question inquires about the role of social innovation platforms in inculcating transversal competencies, which can only be perceived but not quantified, the study employs a qualitative case study research design, which primarily provides deeper insights into human experiences. The reason that a case study approach has been adopted for this study is because it the main question is a how or why question, the researcher has no control over the course of events in the study, the phenomenon being studied is contemporary not historical, and the study is bound by time and place (Creswell, 2016; Yin, 2018). All of these are features of case studies. This research will be based on the study of two similar cases, with the hope that it will provide deeper insight and analysis into the presumed causal link between the engagement of students with social innovation platforms and the learning outcomes for them. The two cases are as follows.

- **Case 1:** Playground, Habib University, Pakistan (Playground, 2019).
- **Case 2:** JMUX-Labs, James Madison University, USA (JMUX-Labs, 2022).

According to Yin (2018), using multiple case studies, even if they are only two, are preferential to a using a single case study, because it minimizes the chances of studying a unique, outlier case. Yin (2018) further differentiates between a holistic and an embedded case study, where the former refers to the study of a case as whole while the latter refers to the study of specific units of analysis within each study. The two case studies for this thesis can be described as multiple, embedded case studies, wherein both studies are analyzed in terms of the following three units of analysis Unit 1: (Learning) Environment; Unit 2: (Learning) Processes; Unit 3: (Learning) Outcomes, each of which corresponds to the three research sub-questions.

The primary data sources for this qualitative study include websites, documents, and interviews, which together help to create a well-rounded picture of the two cases. Documents were used to provide a broad overview of the two platforms, while interviews were used to obtain deeper understanding from the perspectives of the research participants. A total of 15 documents were examined; six from Playground and nine from JMUX-Labs. The documents,

including annual magazines, gazettes, articles, blogs, and social media posts, were used to provide a preliminary overview of the two platforms, and shape the case studies.
A total of 17 interviews were conducted, out of which nine belong to the JMU X-Labs and eight belong to the Playground. The list of interviewees included past and current staff members (including instructional faculty staff and non-faculty administrative staff), students, and alumni of the two platforms. A semi-structured interview style was adopted to reduce the risk of the interviewer asking suggestive questions and pre-empting specific responses. The interview participants were selected through a combination of purposive sampling and snowball sampling, both of which are non-probability sampling methods. The former involved choosing participants who could provide the richest data, while the latter involved the initial interview participants connecting the researcher to further relevant participants for research (Creswell, 2012).

Once the relevant data was collected, the next stage was data analysis. The data analysis was an iterative process which used both a combination of deductive and inductive approaches for thematic analysis, using the computer-assisted qualitative coding software, ATLAS.ti.

Finally, certain methods were employed throughout research to improve the validity and reliability of the study. These included using multiple case studies, triangulating data by using multiple data sources, establishing the dependability of the research instrument by piloting it first, providing a rich and thick description of both the cases, and using data saturation to determine the appropriate amount of data to be collected.

20.5 Research Findings

The primary goal of this study is expressed through its main research question: *University-based social innovation platforms: what role do they play in the development of soft skills in students?* The research question was broken down into three further sub-questions, which have been answered through the next three sections. The next sections will provide an overview of the research findings related to the learning environment, learning processes and learning outcomes of SI platforms.

1. Learning Environment

RQ1. What features define the learning environment of SI platforms?

The learning environment of each SI platform is constructed through a combination of its physical, social and cognitive environments. The physical aspects include the architectural layout of the platforms as well as the hardware equipment and software technology available for use. The cognitive environment includes the unique pedagogical approaches adopted at the platform, including the focus on social innovation, the implementation of design thinking as the core methodology and encouraging trans-disciplinarity in all aspects. The social environment involves the student-centered learning model, team-taught classes, focus on constant improvement of the learning model, and the relationships and networks built through interdisciplinary collaboration between students, faculty and community members.

While the thesis research started out primarily with a theory-driven approach, the researcher also attempted to adopt a data-driven approach later, by allowing the thoughts, opinions, and expectations of research participants to play a role in shaping the theoretical basis of the study. For example, while the study initially used only social innovation as its core concept, the concepts of design thinking and transdisciplinary learning were included after the research participants highlighted their importance during the interviews. Hence, the research findings echo many of the topics and ideas covered in the literature review section, such as the understanding that SI platforms incorporate the principles of social innovation and design thinking in their learning environment and processes, which is one of the key factors that play into the eventual development of transversal competencies in students.

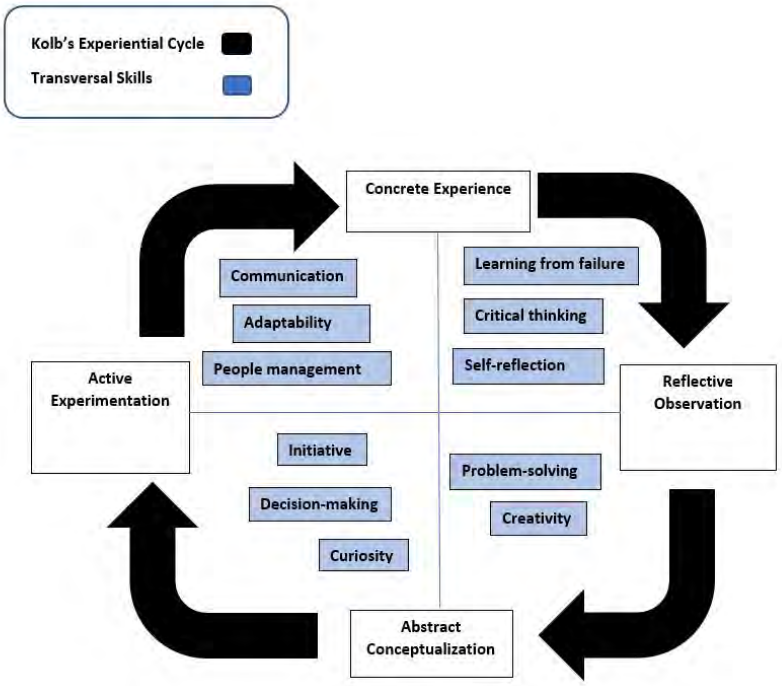
2. Learning Processes

RQ2. What are the learning processes experienced by students at SI platforms?

Learning processes refer to the methodologies and pedagogical activities that are practiced at the platforms. While the author initially intended to use Kolb's experiential learning theory as the sole theoretical lens for understanding the processes at SI platforms, the theoretical framework of the study was expanded to include the concept of design thinking, as both the platforms under study claimed to practice design thinking as a core learning methodology in their courses and problem-solving projects. The previous section showed how the ELC and DTC can be aligned together, which is meant to provide deeper coherence and meaning to each of the two cycles. This joint cycle was then applied to analyze how students' transversal

competencies can be developed throughout the various stages of the joint cycles. Figure 4 represents how transversal competencies are developed as a student moves through Kolb's ELC. To avoid visual overcrowding, the following diagram does not show the DTC superimposed on the ELC. However, the reader should know the development of transversal competencies throughout the experiential learning cycle is also being automatically mirrored in the design thinking cycle.

Figure 4: Development of transversal competencies through joint ELC-DTC



Source: Drawn by author

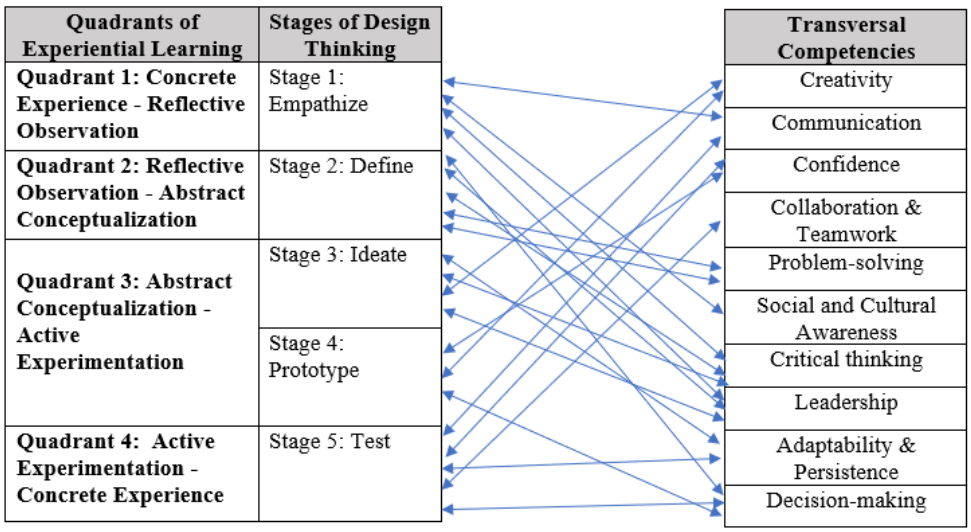
Figure 4 shows how different transversal competencies are developed in different stages of the ELC-DTC joint cycle. As a student moves through the different quadrants of ELC-DTC and engages in different activities, they enhance certain skills and attitudes as a result. For instance, as students define a problem and ideate on its solutions in the second quadrant of the ELC, they enter the problem-solving mode, and use ***creativity*** to think of potential solutions to the problem. Hence, Figure 4 was used as a framework for analyzing the data collected from the interviews regarding the transversal competencies gained during project work. The next section will elaborate on how certain competencies were developed as a result of certain stages of learning.

3. Learning Outcomes

RQ3. What are the outcomes for student participation in SI platforms? How do the learning processes influence the learning outcomes?

The learning environment and learning processes serve as enablers of the learning outcomes, one of which is the development of transversal competencies in students, the core focus of this research. The research results were categorized into three main interlinked outcomes for students: the development of transversal competencies in students, increased networking within and outside the institution, and enhanced graduate employability. For the purpose of the thesis reader, only the first and most important outcome, which is the development of transversal competencies, has been elaborated in detail below. Figure 5, a simplified visual representation of the data analysis section, has mapped the development of certain competencies to certain learning processes, depicted through the five stages of the joint ELC-DTC cycles. By using the above-described theoretical framework, this research attempts to link the development of competencies with the learning processes students go through.

Figure 5: Link between ELC-DTC & Transversal Competencies



Source: Drawn by author.

The theoretical framework for this research has been grounded in two notions - the experiential learning theory and the concept of design thinking. Figure 5 is a reiteration and summary of the concept of combining the two cycles, and showing how their learning stages are linked to student learning outcomes, in the form of the development of transversal competencies. While the diagram maps different competencies on to distinct stages of the

design thinking and experiential learning processes, it is important to remember that the seemingly fixed boundaries between different stages are in fact arbitrary, and their linkage to different outcomes is more fluid than is apparent from the diagram. While certain competencies are the likely outcomes of certain learning processes, they are not a fixed and certain outcome. Furthermore, any of the stages can also lead to the development and enhancement of any particular outcome, depending on the unique nature of each learner's journey. While the data analysis section in the thesis provides a detailed justification behind linking certain transversal competencies to certain stages of the joint cycle, a shorter summary of the results regarding the four core competencies (problem-solving, leadership, creativity, communication) and their relations to the different cyclical stages has been described below.

20.5.1 Problem-solving

At its core, design thinking is an exercise of problem-solving. Hence, problem-solving is a directly expected outcome of the entire process of design thinking and experiential learning. Students reportedly felt that their critical thinking faculties were used the most as they observed a problem situation from multiple angles, and had their original views and assumptions challenged by the respective problem stakeholders when defining and ideating for solutions. In addition, testing out solutions and failing also helped students reassess and review their problem in a more dynamic manner. In addition, empathizing with the community of stakeholders and learning new perspectives from them enhanced a sense of social and cultural awareness in the students, which is another key component for effective problem-solving.

20.5.2 Leadership

The quality of leadership consists of various components, such as adaptability and persistence, decision-making, overcoming the fear of failure, and the ability to take initiative. These qualities are integrated into the different stages of the design thinking cycle, and are enhanced as students experience the different stages of the design thinking process. One of the persistent themes recurring across interviews from both platforms was that nearly all projects included unforeseen setbacks, and students learned to rebound after facing an unsuccessful attempt or an outright rejection from the stakeholders involved. Besides this, most students who worked in a team had the opportunity to take lead in parts of the project where their

expertise was required, which gave them an opportunity to hone their leadership skills. Many students also shared that the platforms provided them an opportunity to propose their own initiatives, and find a team of students that would support them in enacting the initiatives.

20.5.3 Creativity

As a competency, creativity is linked primarily to the learning processes that occur as students receive inputs on problem definitions and brainstorm ideas to imagine creative solutions which they can also make viable enough for implementation. Hence, creativity is characterized by the oscillation between the phases of ideation and prototyping, which stretches cognitive boundaries and enables creative, out-of-the box thinking for students. While creating happens as a result of creative ideation, the opposite can also happen where the act of creating leads to idea generation. This concept has been introduced by Ratto (2011) as "critical making." "Critical making…connect[s] two modes of engagement with the world that are often held separate—critical thinking, typically understood as conceptually and linguistically based, and physical "making," goal-based material work" (p. 253, Ratto, 2011).

20.5.4 Communication

The skill of communication, which encompasses confidence, collaboration and teamwork, is arguably linked to all five stages of design thinking. The stages of empathizing and testing involve communicating with problem stakeholders to understand the problem from their perspectives. The stages of defining, ideating and prototyping involve significant interdisciplinary collaboration amongst the team members addressing the problem together, as well as with the problem stakeholders who can help refine the problem definition and propose ideas for solutions. A few students felt that as they gained more confidence in their own abilities, they were able to communicate their own ideas more effectively, and listen more actively to stakeholders to find solutions through mutual effort

This is how the different transversal competencies are interlinked to different stages of the learning processes depicted through the joint ELC-DTC framework. While on the outset, transversal competencies seem to be mapped on to different stages of the learning process, it is important to reiterate that this mapping is subjective, fluid and fluctuating.

20.6 Recommendations for Future Research

This thesis research focused on the role of social innovation platforms in the development of transversal competencies through a qualitative, case-study based approach. Hence, the results were heavily based on the opinions and perspectives of student and faculty participants. While the research question was framed in a way that would benefit more from a qualitative study, further research on the topic could benefit from a mixed methods approach, so a larger number of participants can be surveyed. Similarly, this study can be expanded to include many more university-based SI platforms in different parts of the world. Using a mixed methods approach as well as expanding the scope of research to include a greater number and variety of cases will increase the generalizability of the study conclusions.

In addition, this study can be undertaken in a more critical manner which questions the study's underlying assumption that transversal competencies are valid criteria for measuring learning. Due to the time and resource limitation of the author, this study does not adopt a critical approach to the notion of transversal competencies as a valid learning outcome. However, educational literature contains significant debate and critique on the legitimacy of the concept of core transferable competencies, and criticizes the notion that a set of generic skills can be equally valuable for all university graduates in all disciplines across the board (Gilbert et al., 2004; Hyland & Johnson, 1998). A further study on the subject can explore the cogency and utility of transversal competencies in light of these existing debates in higher education.

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